2016 Annual Monitoring Report

Reaches 5D, 5E, 7, 8, and the Mack Road Staging Area of the Kress Creek / West Branch DuPage River Site

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DuPage County, Illinois

Certification

To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

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February 2017

Table of Contents

Figures

Tables

Exhibits

Appendices

Executive Summary

This report presents the results of monitoring and maintenance activities that were performed during 2016 for the Kress Creek / West Branch DuPage River Site in DuPage County, Illinois. The monitoring activities were performed by Applied Ecological Services, Inc. and SmithGroupJJR in accordance with the approved *Conceptual Mitigation and Restoration Design Plan* (BBL, 2005) and on behalf of the West Chicago Environmental Response Trust (WCERT).

Agency Meetings, Correspondence and Key Decisions

WCERT met and corresponded several times with the USEPA and Local Communities in 2016. The following summarizes key decisions made during those meetings and communications:

- Controlled Burn Permits: An email discussion with USEPA and the Local Communities in February 2016 clarified the requirements for open burn permits for vegetation management at the site. As Kress Creek is a CERCLA Superfund site, Open Burn Permits per the Illinois Environmental Protection Agency (IEPA) are not required. However, agency staff prefers that Contractors working on site complete and submit to the IEPA an Open Burn Permit Application, and copy the same application with a burn plan and all attachments to the Local Communities for approval. Authorization to burn will be granted upon approval by the Local Communities, even if the IEPA does not grant approval prior to the proposed burn date. It is the Contractor's responsibility to coordinate with the Local Communities in regard to the specific timing of the burn and notifications to various agencies and residents that need to be contacted prior to ignition.

- Streambank Repair: AES worked with WCERT to develop plans and a cost estimate to repair erosion at two areas along Ferry Creek. The first area is a riffle structure and grade control. The second area is a stretch of failed bank. The proposed strategy is to use in-stream structures to direct flows away from the bank, and armoring along the bank to hold soils in place. The USEPA and Local Communities have concurred with this general approach, and the development of plans and a cost estimate are underway. Restoration of these areas is expected to occur during 2017.

Management Activities

Management of areas within each reach is summarized below. More detailed lists of these activities are found in Table 3.1 and Appendix A.

<u>Reach 5E</u>

- This site was blanket herbicided during late summer and burned and reseeded during late fall.

<u>Reach 8A</u>

- Pod R8-3. Site was burned during April 2016. Garlic mustard was pulled and later spot-herbicided. Honeysuckle was cut and treated in the woods. Reed canary grass and other weeds were spot-herbicided throughout the growing season. Giant ragweed was cut along the river.

- Area 4. Entire area (dominated by reed canary grass) was killed off with herbicide during the growing season and burned and re-seeded during fall 2016.

- Areas 5. Site was burned during April 2016 and over-seeded during June followed by spot-herbiciding of invasive species including reed canary grass, Canada thistle, and *Phragmites*. Giant ragweed was also cut.

- Area 6. Site was burned during April 2016 and over-seeded during June. Invasive species, including reed canary grass, Canada thistle, teasel, purple loosestrife, cattail, and *Phragmites* were spot-herbicided or hand-wicked during the growing season.

Reach 8B

- Area 11: This area is a narrow strip along the south and east banks of the DuPage River near the McDowell Grove parking area off Raymond Drive. The area was burned during early April, and reed canary grass, purple loosestrife, Canada thistle, and bluegrass were spot herbicided during June, July, and October. Giant ragweed, mugwort, and Queen Anne's lace were mowed in August.

- Area 12. This is the largest (8.98 acres) area within Reach 8B. The area was burned in early April and over-seeded on June 9th. Clover, sweet clover, thistle and crown vetch were spot herbicided before the seeding. The site was spot herbicide four times after the seeding and targeted the same species plus reed canary grass, purple loosestrife, *Phragmites*, cattail, cottonwood, and bluegrass. In addition, the site was spot mowed during June, July and August targeting annual and biennial weeds (e.g. Queen Anne's lace and ragweed) and cottonwood re-sprouts.

The Mack Road Staging Area

- No management occurred in this area.

Reach 5D Upland Savanna

- This area was blanket-herbicided during 2015, and spot herbicided and re-seeded with the Upland Savanna mix in June and a cover crop in July of 2016. It was mowed and spot herbicided several times during the growing season.

Monitoring Results and Management Recommendations

The following summarizes conclusions for each reach based on 2016 monitoring results and site inspections, and proposes management activities for specific areas for 2017.

Herbaceous Vegetation
Vegetation monitoring results and recommended management activities by reach is summarized in Table EX.1. 2016 results are compared to 2015 results in Table EX. 2.

Reach 5E

Performance: Reach 5E was not monitored during 2016 because it was blanket-herbicided during the growing season in preparation for reseeding. The site was burned and reseeded during the fall.

Recommendations:

- Mow reseeded areas during late spring and mid-summer.
- Spot herbicide reseeded areas as required during 2017.

Reach 8A

Performance: Reach 8A did not meet any of the performance standards. One performance standard was met in 2015 (>90% vegetation cover). Total cover and non-native (weed) cover were lower in 2016 than in 2015 and reed canary grass was no longer a dominant due to aggressive management of these sites this season. Most of these sites were reseeded this season and are expected to have greater cover in 2017. Please note that signoff is considered separately for Reach 8A and Reach 8B per the 2015 Annual Monitoring Report.

Recommendations: Pod R8-3

- Remove remaining honeysuckle from woods. Do not remove coralberry.
- Monitor and manage garlic mustard during early spring.
- Cut and treat elm and silver maple saplings near river.
- Monitor reed canary grass near river during spring and herbicide as needed.

Recommendations: Area 4

- Area was burned and reseeded during fall 2016.
- Mow during late spring and mid-summer 2017.
- Spot herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 5

- Area was burned during April and over-seeded during June 2016.
- Spot herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 6

- Area was burned during April and over-seeded during June 2016.
- Spot herbicide *Phragmites* and purple loosestrife (T14 area).
- Spot herbicide reed canary grass (T15 area).

Reach 8B

Performance: Reach 8B met or exceeded three out of six performance standards. The ground cover was 94%, the three most dominant species were native, and the Native Mean C and FQI increased in 2016. However, the native Mean C was 3.12, invasive weeds composed 21.0% of the herbaceous ground cover, and patches of bare ground exceeding 0.5 square meters. This is a substantial improvement from last year (2015) when only one (>90% vegetation cover) of five performance standards were met. The most significant improvements includes the reduction of non-native (weed) cover to 21% (from 36%) and the three dominants species are all natives and no longer include reed canary grass.

Recommendations: Area 11 – T1 (North of drive)

- Mow, conduct a prescribed burn, and then seed with native grasses (e.g. *Elymus virginicus*) during the spring.
- Cut and herbicide silver maple and black locust seedlings and saplings.

Recommendations: Area 11 – T2 (South of drive)

- Herbicide and eradicate honeysuckle and purple loosestrife. Reduce Canada goldenrod by 75% using herbicide and mowing.
- Herbicide and reseed (with Open Floodplain mix) mowed access area during spring.
- Inform FPDDC that area is part of WCERT and should not be used.

Recommendations: Area 12 – T3 & T4

- Spot herbicide cool season grasses (e.g. Kentucky bluegrass, Hungarian brome, tall fescue, reed canary grass) and *Phragmites* next spring, especially in the swales and east of T4.
- Reseed killed off areas during spring with Upland Prairie mix.
- Manage Canada goldenrod on north end:
    - Mow and burn during spring 2017.
    - Herbicide Canada goldenrod basal rosettes during spring after burn.
    - Reseed killed-off areas during spring with specified seed mixture.
    - Mow/cut Canada goldenrod late summer 2017 (i.e. August) to prevent it from setting seed.

Recommendations: Area 12 – T5 & T7

- Areas are dominated by native species with few invasive species.
- Spot herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 12 – T6 & T8

- Mow, burn and reseed with a grass heavy native mix next spring (2017), except where *Elymus virginicus* is already heavy.
- Numerous trees and shrubs have been installed in the T6 area and caution should be taken during the prescribed burn not to damage these plants.

<u>Mack Road – Staging Area</u>

Performance: Mack Road staging area achieved its performance standard (>90% vegetation cover), but will not receive signoff until Reach 5D-Upland Savanna also meets the same performance standard.

Recommendations:

- Conduct prescribed burn during spring 2017. Precautions need to be taken to avoid damaging installed trees and shrubs.

<u>Reach 5D Upland Savanna</u>

Performance: Reach 5D-Upland Savanna did not meet the performance standard (>90% vegetation cover).

Recommendations:

- Mow seeded areas during late spring and mid-summer.
- Spot herbicide weeds as necessary during spring and summer 2017.
- Monitor at end of summer to assess establishment.

Monitoring Methods

Herbaceous Species
Herbaceous species were monitored on June 14, 2016, (species inventories only) and August 30-31, 2016, (transects and species inventories) per the Plan except that quadrats were located along transects as is generally accepted by regulatory agencies in the region. This modified protocol was approved per a June 11, 2015, email to the USEPA and Local Communities' representatives.

Tree and Shrub Survival
Tree and shrub monitoring for survival was performed in Reach 8B and Mack Road / Reach 5D Upland Savanna on September 12-13, 2016. Survival was determined by visual assessment of the plant material, using the following criteria established in 2015 by the project team and agency staff:

> *Replace any plants that are damaged, dead, or, in the opinion of the Owner's Representative, with concurrence from the Local Communities, are unhealthy, or have lost more than 25% of their natural shape due to dead branches, excessive pruning or improper maintenance.*

As modified by the 2015 Annual Monitoring Report, percent survival is based on the number of acceptable plants observed during 2016 as compared to the recorded number of acceptable plants observed during 2015. The criterion for acceptance is 90% survival of the 2015 acceptable plant material. Replacements for plants that did not meet acceptance criteria in 2015 on Forest Preserve property shall be made at the completion of the maintenance and monitoring period for each reach as a punch list item. All plants not meeting acceptance criteria in 2015 were allowed to remain in place, but are no longer subject to maintenance and monitoring requirements.

Only plants that were coded as "Acceptable Condition" were considered to have "survived" for the percent survival calculation.

Bower Elementary School in Reach 8A was not monitored during the September 2016 visit. All dead plant material identified during 2015 at the school site was replaced on May 14, 2016, and the remaining plants were observed to be in good condition at that time. A one-year warranty was provided for the installed plant material by the contractor, Tallgrass Restoration. These plants will be assessed during early May 2017 to determine if warranty replacements are necessary. Similarly, as Reach 7 achieved sign-off during 2015, 22 canopy tree replacements and 58 shrub replacements were installed on two islands in the river from May 23 to May 26, 2016, by Tallgrass Restoration. No formal maintenance and monitoring are required for these replacement plantings in Reach 7. However, WCERT has contracted for a one-year warranty on the installed trees and shrubs, and will evaluate the plantings and provide any necessary warranty replacements during May 2017. However, this warranty assessment is not considered a monitoring activity under the standard maintenance and monitoring protocols.

Restored Banks

Bank monitoring was performed per the Plan. Each stretch of the study area in Reach 8A and 8B was inspected in 2016. Areas of stability were photographed, and areas of instability were described, mapped and photographed.

All banks and structures were stable except for the two areas along Ferry Creek described in the 2016 Annual Report. The first area is a riffle structure and grade control. The proposed restoration strategy is to extend the wing along the right bank to prevent the stream from eroding around the structure. The second area is a stretch of failed bank. The proposed strategy is to use in-stream structures to direct flows away from the bank, and armoring along the bank to hold soils in place. The USEPA and Local Communities have concurred with this general approach, and the development of plans and a cost estimate are underway. Restoration of these areas is expected to occur during Q4 2017.

Monitoring Results

Herbaceous Vegetation

Table EX.1 below summarizes the results of 2016 herbaceous species monitoring. Monitoring results indicate that no areas have achieved performance standards; therefore, none are recommended for signoff.

Table EX.1 Vegetation monitoring results by reach and management recommendations for 2017

Reach	Standard	2016 Results			2017 Management Recommendations	Recommend Signoff?
5D Upland Savanna	90% cover	79.0%			Selectively herbicide weeds Q2-Q3. Re-seed Q2, if needed;	Not recommended due to <90%% cover.
8A	90% cover	61.5%			**Pod R8-3**: Selectively herbicide weeds Q2-Q3.Cut and herbicide woody weeds Q2. **Area 4-6**: Selectively herbicide weeds Q2-Q3.	Not recommended. Percent cover is under 90%, invasive weeds exceed 5%, Native C is below 3.5 and patches of bare ground exceeds 0.5 sq. meters
	<5% weeds	15.1%				
	Native C > 3.5	2.64				
	FQI	15.14				
	C and FQI increase	No				
	No bare ground ≥ 0.5 square meter	No				
	3 most dominant species native?	Species	RIV	Native?		
		SYMLAN	15.7	Yes		
		GLEHED	11.6	No		
		RUDSUB	6.5	Yes		
8B	90% cover	94.3%			**Area 11**: Selectively herbicide weeds Q2-Q3. Cut and herbicide woody weeds Q2. Re-seed Q2. **Area 12**: Mow, burn, selectively herbicide, and supplemental seed Q2; Mow Q3.	Not recommended. Invasive weeds exceed 5%, Native C is below 3.5, and patches of bare ground exceeds 0.5 square meters
	<5% weeds	21.0%				
	Native C > 3.5	3.38				
	FQI	33.12				
	C and FQI increase	Yes				
	No bare ground ≥ 0.5 square meter	No				
	3 most dominant species native?	Species	RIV	Native?		
		SOLCAN	8	Yes		
		ELYCAN	4.6	Yes		
		ELYVIR	4.5	Yes		
Mack Road Staging Area	90% cover	107.2%			No management recommended.	Not recommended. Standard met, but signoff to be concurrent with Reach 5D Upland Savanna

Table EX.2 2015 versus 2016 vegetation monitoring results by reach.

Reach	Standard	2015 Results			2016 Results		Change	
5D Upland Savannah	90% cover	0.0%			79.0%		79.0%	
8A	90% cover	111.6%			61.5%		-50.1%	
	<5% weeds	38.8%			15.1%		-23.7%	
	Native C > 3.5	2.84			2.64		-0.20	
	Native FQI	15.81			15.14		-0.67	
	No Bare ground ≥ 0.5 square meter	No			No		No change	
	3 most dominant species native?	Species	RIV	Native?	Species	RIV	Native?	No change- 2/3 species are native
		PHAARU	12.4	No	SYMLAN	15.7	Yes	
		SYMLAN	12.1	Yes	GLEHED	11.6	No	
		SOLALT	11	Yes	RUDSUB	6.5	Yes	
8B	90% cover	106.3%			94.3%		-12.0%	
	<5% weeds	36.1%			21.0%		-15.1%	
	Native C > 3.5	3.22			3.38		0.16	
	FQI	32.99			35.12		2.13	
	No Bare ground ≥ 0.5 square meter	No			No		No	
	3 most dominant species native?	Species	RIV	Native?	Species	RIV	Native?	Improved- 3/3 species native
		SOLALT	9.2	Yes	SOLCAN	8	Yes	
		PHAARU	5.2	No	ELYCAN	4.6	Yes	
		ELYVIR	4.5	Yes	ELYVIR	4.5	Yes	
Mack Road Staging Area	90% cover	106.3%			107.2%		0.9%	

Tree and Shrub Survival

The Mack Road / Reach 5D Upland Savanna site met the performance standard for survival of woody plants, with 91% total survival of the plants remaining after the 2015 monitoring season. All trees at the Mack Road site were noted to be in an acceptable condition, with 86% survival for shrubs. Reach 8B fell just short of meeting the performance standard, with 87% of all plants surviving. Again, trees had a higher survival rate than shrubs, at 93% and 83% respectively. Table EX.3 below summarizes the results of Tree and Shrub Survival Monitoring:

Table EX.3 Percent survival of trees and shrubs in all reaches, 2016 monitoring season

Site	% Survival Trees	% Survival Shrubs	Total % Survival of Woody Plants
Mack Road / Reach 5D Upland Savanna	100%	86%	91%
Reach 8B	93%	83%	87%

Restored Banks

The condition of banks and structures were stable within the study area except for two locations on Ferry Creek at McDowell Grove Forest Preserve. Please see Appendix D for representative photographs of stable areas and Figures 5.3 and 5.4 of areas needing repairs.

Discussion

Herbaceous Vegetation

Reach 5E: This was not monitored during 2016 because it was blanket-herbicided during the growing season in preparation for reseeding. The site was burned and reseeded during the fall. The area will be managed to reduce non-native species and facilitate the expansion of native species during 2017.

Reach 5D Upland Savanna: This reach was blanket-herbicided during Q3 2015 and reseeded during Q3 2016 and therefore did not meet its performance standard. The area will be managed to reduce non-native species and facilitate the expansion of vegetation cover during 2017.

Reach 8A: No performance standards were met in this area in 2016. One performance standard was met in 2015 (>90% vegetation cover). Total cover and non-native (weed) cover were lower in 2016 than in 2015 and reed canary grass was no longer a dominant due to aggressive management of these sites this season. Most of these sites were reseeded this season and are expected to have greater cover in 2017. The area will be managed to reduce non-native species and facilitate the expansion of native species during 2017.

Reach 8B: This reach met or exceeded three out of six performance standards. The ground cover was 94%, the three most dominant species were native, and the Native Mean C and FQI increased in 2016. However, the native Mean C was 3.12, invasive weeds composed 21.0% of the herbaceous ground cover, and patches of bare ground exceeding 0.5 square meters. This is a substantial improvement from last year (2015) when only one (>90% vegetation cover) of five performance standards were met. The most significant improvements includes the reduction of non-native (weed) cover to 21% (from 36%) and the three dominants are all natives no longer include reed canary grass. The area will be managed to reduce non-native species and facilitate the expansion of native species during 2017.

Mack Road Staging Area: This area achieved its performance standard. However, the site is linked to Reach 5D Upland Savanna, which did not meet criteria for signoff at this time. The area will be monitored and managed during 2017.

Tree and Shrub Survival

The Mack Road / Reach 5D Upland Savanna site is presently meeting the established performance criteria of 90% survival. However, trees performed significantly better than shrubs at this site. For shrubs, 15 plants were noted to be dead, while another eight plants were noted to be missing. Given that many of the shrubs are still small in stature compared to the prairie grasses surrounding them and that the existing staking materials were observed to be in poor condition and falling apart during the 2015 monitoring, it is highly probable that the missing plants may have been broken off or trampled by the maintenance contractor during the work to remove and reset the staking materials. It is possible that these shrubs may regrow from the root if they were only damaged. The lowest survival rates were observed for prickly ash (*Xanthoxylum americanum*, 50%), choke cherry (*Prunus virginiana*, 53%), and wild plum (*Prunus americana*, 58%).

Reach 8 did not meet the established performance criteria of 90% survival. As with Mack Road, trees performed better than shrubs. Since the 2015 monitoring, four trees died, one was damaged by beaver and is re-growing from the root, three trees had their leader die, and two trees were missing. The missing trees were located near the river and may have been damaged by beaver and lost in thick vegetation. No pattern was apparent in the tree losses as multiple species were impacted. For shrubs, 30 plants did not survive, and six were missing. Several of the losses appeared to be casualties of the herbaceous management activities. The lowest shrub survival rates were observed for prickly ash (*Xanthoxylum americanum*, 55%) and red osier dogwood (*Cornus stolonifera*, 60%).

Restored Banks

All reaches with the exception of two areas were stable. While several previous photos showed exposed soil at the toe of the bank, the soil is actually sediment that has deposited on top of the cobble toe. The two eroded reaches both occurred in McDowell Grove County Forest Preserve on Ferry Creek.

Conclusions and Recommendations

Herbaceous Vegetation

Management of Reach 8A, 8B, and 5D has resulted in improved conditions at each. Non-native cover has been reduced from 39% to15% in 8A and 36% to 21% in 8B, and reed canary grass is no longer a dominant species in either. Although total vegetation cover was well below 90% (61%) this season in Reach 8A, it is expected to improve greatly next season because most areas were reseeded in 2016. Vegetation was established in the upland savanna of Reach 5D (79% cover). No management occurred in the Mack Road. staging area, and vegetation cover remained nearly the same (107%). Reach 5E was not monitored this season (2016) because nearly the entire site was blanket herbicided and reseeded in the fall.

Proposed management activities and the reaches where they will be implemented are listed in Table EX. 4 below. Table EX.4 summarizes proposed 2017 management activities by task and reach.

Table EX.4 Summary of proposed 2017 management activities by task

Task	Reach(s)	Unit	Unit(s)	Schedule 2017
Burn	8B-Area 12	Acres	8.98	Q1
	8B-Area 11	Acres	0.53	Q1
Spot Herbicide (2-3 visits during the growing season)	8B-Area 12	Acres	8.98	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	8A-Area 6	Acres	0.23	Q2-Q3
	8A-Area 5	Acres	0.28	Q2-Q3
	8A-Area 4	Acres	0.35	Q2-Q3
	8A-Pod R8-3	Acres	0.14	Q2-Q3
	5D Upland Sav	Acres	0.23	Q2-Q3
	5E	Acres	4.57	Q2-Q3
Supplemental Seeding	8B-Area 12	Acres	0.23	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	5D Upland Sav	Acres	0.23	Q2-Q3
Mow 1-2x	8B-Area 12	Acres	8.98	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	8A-Area 4	Acres	0.35	Q2-Q3
	5E	Acres	0.23	Q2-Q3
Mow and Rake Around Surviving Woody Material to protect from prescribed burning.	8B	Each	378	Q1

Tree and Shrub Survival

The following recommendations are made for woody plant survival:

- Continue to monitor the Mack Road / Reach 5D Upland Savanna site, which is currently meeting performance standards. Herbaceous vegetation will be eligible for sign off at the end of the 2018 growing season. If the woody vegetation still meets performance criteria at that time, the site will be complete and ready for the 2015 punch list replacements.
- Although Reach 8 is presently not meeting standards, do not provide replacement plant materials until the herbaceous vegetation meets acceptance criteria. As Reach 8B herbaceous vegetation will not be eligible for signoff until fall 2018, continue to assess the woody survival until that time to determine appropriate replacements in addition to the 2015 punch list.

Monitoring at Bower Elementary School will cease following acceptance of the one year planting warranty for replacements installed during 2016.

Restored Banks

The following recommendations are made for bank stability:

- No additional monitoring should be required of stable reaches.

- Repair eroded bank near confluence of Ferry Creek and the West Branch of the DuPage River using in-stream structures and bank armoring. Proposed plans are underway and will be completed during 2017 for implementation during Q4 2017.
- Repair eroded riffle located approximately 700 feet upstream of the confluence of Ferry Creek and the West Branch of the DuPage River by extending the wing of the riffle on the right bank approximately 40 feet. Proposed plans are underway and will be completed during 2017 for implementation during Q4 2017.

Projection for Future Maintenance and Monitoring Activities

Maintenance and monitoring activities will continue until all areas meet established performance criteria and receive signoff. Based on the 2015 recommendation to blanket-herbicide and reseed, Reach 5E, Reach 5D Upland Savanna, and Reach 8A Area 4 will require three additional years of monitoring after seeding is complete in order to verify that the establishment of herbaceous vegetation is successful. Reach 5D was reseeded June 4, 2016, and thus may be considered for signoff by the end of the 2018 growing season. Because access to Reach 5D is through the Mack Road Staging Area, this entire area will also be maintained and monitored through at least the 2018 growing season. Reach 5E and Reach 8A Area 4 were reseeded November 30, 2016, following summer herbicide applications. Therefore, the required three full growing seasons for monitoring of these areas is anticipated to end during fall 2019. Also, because smaller subareas are not considered separately for signoff, all other areas of Reach 8A will also require monitoring through 2019. Reach 8B may be considered for signoff of herbaceous vegetation during fall 2018 as agreed upon by WCERT correspondence dated February 11, 2016, and will be monitored and managed until that time.

Warranty assessments for tree and shrub replacements will be completed for Reach 7 during May 2017. However, this warranty assessment is not considered a monitoring activity under the standard maintenance and monitoring protocols. Monitoring of trees and shrubs in Reach 8B and the Mack Road Staging Area will continue until these areas meet performance criteria, including the herbaceous vegetation as discussed above. Per the 2015 monitoring results, minimum woody plant replacements required as a punch list item at the end of the monitoring are included in this report as Table 7.4 – 7.5.

It is recommended that the entire stretch of Ferry Creek be monitored for one year following the remediation of the identified eroded banks, assuming that at least one bankfull discharge storm event occurs. If the repairs on Ferry Creek are successfully completed during Winter 2017-2018, the creek will be ready for signoff by Spring 2018. Bank monitoring on the West Branch DuPage River is complete.

1.0 Introduction

This report presents the results of monitoring and maintenance activities that were performed during 2016 for the Kress Creek / West Branch DuPage River Site in DuPage County, Illinois. Monitoring activities were performed by Applied Ecological Services, Inc. (AES) and SmithGroupJJR on behalf of the West Chicago Environmental Response Trust (WCERT) to characterize the status of restored habitats following the completion of remedial activities, and were performed in accordance with the approved *Conceptual Mitigation and Restoration Design Plan* (BBL, 2005) and approved changes or clarifications as documented below. The 2016 monitoring results were compared to relevant performance standards to determine if restored habitats were performing as designed, or if adaptive management maintenance activities should be implemented to achieve performance standards. Signoff is requested for areas which have achieved performance standards and have been monitored for the required time period.

1.1 Overall Project History

From 1932 to 1973, the Rare Earths Facility in West Chicago processed radioactive thorium and other elements from ores and sands. Wastes from the facility contaminated Kress Creek, the West Branch of the DuPage River, and other local sites, which collectively were designated by the USEPA as the Kress Creek Superfund Site. The site has been divided into several different sections or "Reaches" as described below:

- Reach 1: Kress Creek from the storm sewer outfall south of Roosevelt Road to May Street
- Reach 2: Kress Creek from May Street to Joy Road
- Reach 3: Kress Creek from Joy Road to Route 59
- Reach 4: Kress Creek from Route 59 to the confluence with the West Branch DuPage River (WBDR)
- Reach 5A: WBDR from West Chicago Wastewater Treatment Plant to Gary's Mill Road
- Reach 5B: WBDR from Gary's Mill Road to confluence with Kress Creek
- Reach 5C: WBDR from the confluence with Kress Creek to Mack Road
- Reach 5D: WBDR from Mack Road to River Oaks subdivision
- Reach 5E: WBDR from River Oaks subdivision to Williams Road
- Reach 6: WBDR from Williams Road to Butterfield Road
- Reach 7: WBDR from Butterfield Road to Warrenville Dam
- Reach 8A: WBDR from Warrenville Dam to approximately 2,200 feet upstream of McDowell Dam
- Reach 8B: WBDR from Reach 8A to McDowell Dam

Cleanup at the site began in Reach 5B, and progressed through 2013 when the last of the work was completed at Reach 8B, the Bower Elementary School site in Reach 8A, and the Route 59 Bridge over Kress Creek. Per the *Conceptual Mitigation and Restoration Design Plan*, post-construction monitoring of streambanks and restored public land is required for a minimum of three years (BBL, 2005). This monitoring is ongoing for certain reaches as described in Section 2.0 below. Monitoring of residential and commercial sites was required for one year following construction, and has been completed for all Reaches.

Due to Federal funding issues, the project went through an orderly shutdown on June 1, 2014, and no maintenance or monitoring activities were conducted until August 2015 as documented by the 2015 Annual Monitoring Report. This report documents the project activities for the 2016 season.

2.0 Agency Meetings, Correspondence and Key Decisions

Representatives from AES and SmithGroupJJR communicated with WCERT, Local Communities, and USEPA, during 2016 to facilitate a mutual understanding of the status of monitoring and management activities necessary for each Reach to be certified as complete. Important meetings, correspondence, and key decisions are listed below:

- February 2016: An email discussion with USEPA and the Local Communities clarified the requirements for open burn permits for vegetation management at the site. As Kress Creek is a CERCLA Superfund site, Open Burn Permits per the Illinois Environmental Protection Agency (IEPA) are not required. However, agency staff prefers that Contractors working on site complete and submit to the IEPA an Open Burn Permit Application, and copy the same application with a burn plan and all attachments to the Local Communities for approval. Authorization to burn will be granted upon approval by the Local Communities, even if the IEPA does not grant approval prior to the proposed burn date. It is the Contractor's responsibility to coordinate with the Local Communities in regard to the specific timing of the burn and notifications to various agencies and residents that need to be contacted prior to ignition.
- May 17, 2016:
    - Bower Elementary School: SmithGroupJJR staff met with Colin Wilkie, School District Facilities Representative, to review the replacement planting installation.
    - Reach 7: SmithGroupJJR and Tallgrass Restoration met with FPDDC staff to review locations and access plans for tree and shrub punch list plantings on the islands in Reach 7.
    - Seed Mix Substitution: The Local Communities approved the substitution of *Osmorhiza claytonii* for *Dioscorea villosa* in the original project seed mixes based on species availability.
- June 29th, 2016: detailed correspondence between WCERT, SmithGroupJJR, AES, and Tallgrass regarding stewardship visit for maintenance and monitoring across Reach 8, Areas 11, 23, Pod R8-4, Reach 7 Areas 1, 2, & 4.
- August 15th, 2016: correspondence with Local Communities and WCERT regarding the timing and delivery of trees to FPDDC Nursery.
- September 21, 2016: The Local Communities verified that any trunk protection materials that are beginning to negatively impact trees in Reach 7 should be disposed of as part of the staking material removal. The trunk protection materials that are still effective and not damaging the trees should remain in place and will become the responsibility of the FPDDC.
- September 28, 2016: A total of 65 replacement plants for Reach 7 were delivered to the FPDDC Nursery. Prior to delivery, the Local Communities approved the substitution of *Quercus macrocarpa* for 14 of the *Juglans cinerea* based on species availability.
- November 10th, 2016: WCERT, SmithGroupJJR, and AES participate in a conference call to evaluate whether the DCFPD should burn Reach 5D (Mack Road). Attendees decided they have no objection to FPDDC conducting a prescribed burn as long as they stay out of the Mack Road staging area, and assume responsibility for woody material that might be damaged during the burn. The FPDDC subsequently decided not to burn this area.

2.1 Status of Restoration and Monitoring by Reach

Table 2.1 Summary of the status of each Reach for monitoring activities and agency signoff

Reach or Area	Monitoring Period Start Date	Certified Completion of Monitoring	Comments
Reach 1	10.2.2007	12.15.2010	
Reach 2	10.2.2007	12.15.2010	
Reach 3A	10.2.2007	12.15.2010	
Reach 3B	11.27.2007	9.11.2012	
Reach 4	11.27.2007	9.11.2012	
Reach 5A	08.11.2006	9.11.2012	
Reach 5B	06.25.2008	9.11.2012	
Reach 5C	11.17.2008	9.11.2012	
Reach 5D	11.24.2008	9.11.2012	Excludes Mack Road / Reach 5D Upland Savanna
Reach 5E	11.24.2008	Ongoing	
Reach 6	08.24.2009	11.12.2013	
Reach 7	9.20.2012	April 2016	
Reach 8A	9.20.2012	Ongoing	
Reach 8A – Bower Elementary	10.28.2013	Ongoing	Requesting sign off this year (2017).
Reach 8B	09.25.2015	Ongoing	
Mack Road Staging Area	6.8.2012	Ongoing	Includes Reach 5D Upland Savanna
Route 59 Bridge Area	12.7.2012	April 2016	

Based on the meetings held with Agency staff, below is a summary of the areas identified with ongoing monitoring activities for 2016. These areas are also documented for individual locations within the Reach per base maps in Exhibit A.

<u>Reach 5E</u>
Herbaceous: Full Performance Standards required
Tree / Shrub Survival: Monitoring completed, 2010
Restored Banks: Monitoring completed, 2011

<u>Reach 8A</u>
Herbaceous: Full Performance Standards required in areas shown on Exhibit A
Tree / Shrub Survival: N/A
Restored Banks: Monitoring required in areas shown on Exhibit A

<u>Reach 8A – Bower Elementary</u>
Herbaceous: N/A
Tree / Shrub Survival: Monitoring required
Restored Banks: N/A

Reach 8B

Herbaceous: Full Performance Standards required in areas shown on Exhibit A
Tree / Shrub Survival: Monitoring required in areas shown on Exhibit A
Restored Banks: Monitoring required in areas shown on Exhibit A

Mack Road Staging Area and Reach 5D Upland Savanna

Herbaceous: Full Performance Standards required for Reach 5D Upland Savanna, 90% Native Cover only for Mack Road Staging Area
Tree / Shrub Survival: Monitoring required for Reach 5D Upland Savanna
Restored Banks: N/A

3.0 Maintenance, Management and Monitoring Activities

3.1 Maintenance and Management Events

Maintenance and management activities resumed during late summer / fall 2015 following a year of no maintenance during 2014 due to lack of federal funding. During 2015, Tallgrass Restoration, LLC, with oversight by SmithGroupJJR staff, completed maintenance tasks during August and September. Tallgrass Restoration, LLC, with oversight by AES and SmithGroupJJR staff, completed maintenance tasks from March through December during 2016. Primary maintenance tasks consisted of broadcast and spot herbiciding invasive weeds, controlled burning, reseeding native mixes and prescribed mowing. Table 3.1 summarizes management activities; see Appendix A for copies of field reports.

3.2 Monitoring Events

Monitoring herbaceous and woody plant material and the stability of banks and in-stream structures occurred over several visits as described below:

- Trees and Shrubs: September 12-13, 2016, Monitored per methods described below.
- Quantitative Herbaceous Monitoring: Monitored August 30-31, 2016, per methods described below.
- Floristic Inventories: Inventoried June 14, 2016, and during quantitative herbaceous monitoring August 30-31 per methods described below.
- Stream Banks and In-stream Structures: Monitored June and December 2016 per methods described below.

3.3 Management Activities

Management of areas within each reach is summarized below and more detailed lists of these activities are found in Table 3.1 and Appendix A.

<u>Reach 5E</u>

- This site was blanket herbicided in late summer and burned and reseeded in late fall.

<u>Reach 8A</u>

- Pod R8-3. Site was burned during April 2016. Garlic mustard was pulled and later spot-herbicided. Honeysuckle was cut and treated in the woods. Reed canary grass and other weeds were spot-herbicided throughout the growing season. Giant ragweed was cut along the river.

- Area 4. Entire area (dominated by reed canary grass) was killed off with herbicide during the growing season and was burned and re-seeded during fall 2016.

- Areas 5. Site was burned during April 2016 and over-seeded during June followed by spot-herbiciding of invasive species including reed canary grass, Canada thistle, and *Phragmites*. Giant ragweed was also cut.

- Area 6. This site was also burned during April 2016 and over-seeded during June. Invasive species, including reed canary grass, Canada thistle, teasel, purple loosestrife, cattail, and *Phragmites* were spot-herbicided or hand-wicked during the growing season.

Reach 8B

- Area 11: This area is a narrow strip along the south and east banks of the DuPage River near the McDowell Grove parking area off Raymond Drive. The area was burned in early April, and reed canary grass, purple loosestrife, Canada thistle, and bluegrass were spot herbicided during June, July, and October. Giant ragweed, mugwort, and Queen Anne's lace were mowed in August.
- Area 12. This is the largest (8.98 acres) area within Reach 8B. The area was burned in early April and over-seeded on June 9th. Clover, sweet clover, thistle and crown vetch were spot herbicided before the seeding. The site was spot herbicide four times after the seeding and targeted the same species plus reed canary grass, purple loosestrife, *Phragmites*, cattail, cottonwood, and bluegrass. In addition, the site was spot mowed during June, July and August targeting annual and biennial weeds (e.g. Queen Anne's lace and ragweed) and cottonwood resprouts.

The Mack Road Staging Area

- No management occurred in this area.

Reach 5D Upland Savanna

- This area was blanket-herbicided during 2015, and spot herbicided and re-seeded with the Upland Savanna mix in June and a cover crop in July of 2016. It was mowed and spot herbicided several times during the growing season.

Table 3.1 Summary of site inspections and specific maintenance and management tasks completed during 2016.

Date	Reach	Activity	Notes
03.30.2016	Pod 8-3	Prescribed Burn	
04.04.2016	8 Area 6	Prescribed Burn	
04.04.2016	8 Area 11	Prescribed Burn	
04.05.2016	8 Area 12	Prescribed Burn	
04.05.2016	8 Area 5	Prescribed burn	
04.27.2016	8A & 8B	Site inspection	See 04.27.16 memo from Mark O'Leary "WCERT Kress Creek Vegetation Management Oversight Report", Appendix A
05.14.2016	8A, Bower Elementary School	Tree replacements	Trees subject to one year replacement warranty.
05.17.2016	8A, Bower Elementary School & 7	Site Inspection	See 05.19.16 "Field Observation Report" from Jessie Fink, Appendix A.
05.18.2016	Mack Rd, 5D, 5E, 8A & 8B	Site Inspection	See 05.31.16 email "WCERT management bullet points", Appendix A
05.23.2016 - 05.27.2016	7	Tree punch list plantings on islands	Trees subject to one year replacement warranty.
06.14.2016	8A, Bower Elementary School & 7	Site Inspection	See 06.14.16 "Field Observation Report" from Jessie Fink, Appendix A.
06.14.2016	7, 8A & 8B	Site Inspection	See .06.29.2016 email "RE: WCERT stewardship visit tomorrow," Appendix A
6.28.2016	7	Tree and shrub planting	Trees subject to one year replacement warranty.
06.15.2016 – 10.07.2016	5D	4 Herbicide applications; 3 mowings	See "2016 WCERT Activities", Appendix A
June and July 2016	5D	2 Seedings	Upland Savanna mix in June and cover crop in July
06.15.2016 – 08.22.2016	Pod 8-3	Hand pull garlic mustard, 2 spot herbicide applications, and a mowing	See "2016 WCERT Activities", Appendix A
06.15.2016 – 08.22.2016	8 Area 5	3 Spot herbicide applications	See "2016 WCERT Activities", Appendix A
06.23.2016	8 Area 5	Hand broadcast seed	
06.15.2016 – 08.22.2016	8 Area 6	3 Spot herbicide applications	See "2016 WCERT Activities", Appendix A
06.23.2016	8 Area 6	Hand broadcast seed	
6.15.2016 – 10.19.2016	8 Area 11	3 Spot herbicide applications and a mowing	See "2016 WCERT Activities", Appendix A

Date	Reach	Activity	Notes
06.05.2016 – 10.19.2016	8 Area 12	5 Spot herbicide applications and 2 mowings	See "2016 WCERT Activities", Appendix A
06.09.2016	8 Area 12	Seeding	
07.06.2016	Mack Rd, 5D, 5E, & 8	Site Inspection	See 07.13.2016 memo from Bill Stoll "WCERT Native Vegetation Management Inspection Report", Appendix A
8.18.2016 – 09.29.216	5E	Blanket-herbicide and follow up herbicide	See "2016 WCERT Activities", Appendix A
08.18.2016	8 Area 4	Blanket-herbicide	
09.13.2016	5E, 8A & 8B	Site Inspection	See 09.28.2016 email "WCERT site inspection with Tallgrass", Appendix A
11.08.2016	8 Areas 5,6,11, & 12,R8-3	Site Inspection	See 11.18.2016 email "WCERT Site Visit Notes", Appendix A
11.09.2016	5E	Prescribed burn	
11.09.2016	8 Area 4	Prescribed burn	
11.30.2016	5E	Reseed	
11.30.2016	8 Area 4	Reseed	
April – Sept. 2016	Reach 7 Mack Road Staging Area & Reach 5D Upland Savanna 8B, Areas 11-12	Staking removal and replacement	Staking removed from all trees at Reach 7. Staking replaced or reset for all trees in other reaches noted to be in acceptable condition in 2015. All other staking removed.

4.0 Monitoring Methods

4.1 Herbaceous Species

Herbaceous species were monitored along transects during August 30 and 31, 2016. Herbaceous species were monitored per the Plan except that quadrats were located along transects as is generally accepted by regulatory agencies in the region. This modified protocol was approved per a June 11, 2015, email to the USEPA and Local Communities' representatives. The location and number of quadrats per transect is included as Exhibit B.

4.2 Tree and Shrub Survival

Chapter seven of the monitoring plan states that shrub survival shall be monitored in three randomly located 25-square meter plots per acre, and tree survival shall be monitored in one 100-square meter plot per acre. Revised woody plant restoration requirements were established during 2015 to assist with the establishment of herbaceous vegetation and to prevent an overabundance of plantings with remaining trees that did not meet acceptable form. For plantings on property owned by the Forest Preserve District of DuPage County (FPDDC), the agreed upon action items and assessment criteria are as follows:

- All trees noted as dead during the monitoring period will be allowed to remain in place. Removal is not necessary.
- All trees noted as re-growing from root or tree leader dead during the monitoring period will be allowed to remain in place. No pruning, removal, or future maintenance and monitoring is required for these plants.
- The trees found to be in acceptable condition in the 2015 assessment are the new baseline for maintenance and monitoring for each reach. Therefore, 90% survival of these plants is the criteria for acceptance, and full maintenance and monitoring is required.
- Tree and shrub replacements for plants not meeting acceptance criteria during 2015 shall be replaced at the completion of the maintenance and monitoring period for each reach as a punch list item. FPDDC will provide planting locations for installation of the replacement plants. The geographic origin of all plant materials shall be within a 100-mile radius of the project area. No maintenance and monitoring will be required for the replacements.
- Upon final signoff of each reach, all tree and shrub protection shall be removed. During 2016, protection was removed from all trees not meeting acceptance criteria during 2015. WCERT also verified that all staking had been removed from public property in all reaches that previously obtained signoff (Reaches 1 through 6).

Tree and shrub survival monitoring was completed on September 12-13, 2016, and included the following locations:

- Reach 8B: Areas 11 and 12 as noted on Local Communities release memorandum dated September 27, 2013.
- Mack Road Staging Area: Entire staging area including Reach 5D Upland Savanna habitat.

Bower Elementary School in Reach 8A was not monitored during the September 2016 visit. All dead plant material identified during 2015 at the school site was replaced on May 14, 2016. Remaining plants were observed to be in good condition at that time. A one-year warranty was provided for the installed plant material by the contractor, Tallgrass Restoration. These plants will be assessed during early May 2017 to determine if warranty replacements are necessary. Similarly, as Reach 7 achieved sign-off during 2015, 22 canopy tree replacements and 58 shrub replacements were installed on two islands in the river from May 23 to May 26, 2016, by Tallgrass Restoration. No

formal maintenance and monitoring are required for these replacement plantings, as provided by the above revised requirements. However, WCERT has contracted for a one-year warranty on the installed trees and shrubs, and will evaluate the plantings and provide any necessary warranty replacements during May 2017. This warranty assessment is not considered a monitoring activity under the standard maintenance and monitoring protocols.

During the monitoring, survival was determined by visual assessment of the plant material, using the following criteria established during 2015 by the project team and agency staff:

> *Replace any plants that are damaged, dead, or, in the opinion of the Owner's Representative, with concurrence from the Local Communities, are unhealthy, or have lost more than 25% of their natural shape due to dead branches, excessive pruning or improper maintenance.*

Diagrams were created to document the condition of each individual plant installed per the record drawings, as shown in Exhibit C. The recorded conditions were characterized as follows:

- Acceptable Condition: Plant condition and form meets the criteria outlined above. Only plants that were coded as "Acceptable Condition" were considered to have "survived" for the percent survival calculation.
- Plant Dead: Entire plant was observed to be dead.
- Original Plant Dead, Re-growing from Root: The original tree as planted was observed to have completely died from the ground up, but the plant is re-sprouting from the root ball. Typically, the regrowth is characterized as a more shrub-like form with multiple suckers as shown in Figure 4.1
- Tree Leader Dead, Lower Portion Alive: The tree has lost more than 25% of its form because the central leader has died. However, the plant retains a generally tree-like form as shown in Figure 4.2, but may have multiple new leaders vying to replace the original.
- Plant Missing within Original Stakes or Cannot be Located: The plant could not be located in the field. In some instances, staking was found which indicates a plant was installed in that location, but the plant was not visible within the enclosure. However, most of the time, neither the stakes nor the plant could be located in the vicinity shown on the record drawings.

Figure 4.1: Original Plant Dead, Re-growing from Root

Figure 4.2: Tree Leader Dead, Lower Portion Alive

4.3 Restored Banks

Bank monitoring is required to be performed for three years following construction with at least one event occurring after a storm that equals or exceeds the bankfull discharge (approximately 2-year recurrence interval). The *Conceptual Design Report* (BBL, 2002) indicates 1,090 cubic feet per second (cfs) as the 2-year storm flow for the West Branch of the DuPage River based on data from US Geological Survey Gage #5540094 located near the Warrenville Dam. Restoration of the banks within the Reach 8A and 8B study area was completed during November 2013.

The primary metric for restored banks is visual stability. Instability is noted as erosion features that threaten the integrity of the banks or in-stream structure. The limits of the "bank" extend from the toe of the slope to the break in the slope. Signs of erosion include undercutting, lateral erosion above rock toe protection, exposed geotextile fabric, or vertical erosion down the face of the bank from overland flows. Stability is evaluated based on observations of the bank and in-stream structures as compared to design drawings, considering location in the stream, physical dimensions, and consistency with adjacent, undisturbed banks.

Each stretch of the study area in Reach 8A and 8B was inspected in 2016. Areas of stability were inspected and photographed on December 12, 2016, and the areas of instability on Ferry Creek were inspected and photographed in June 2016.

5.0 Monitoring Results

The results of the monitoring activities performed during 2016 in Reaches 5E, 8A, 8B, the Mack Road Staging Area, and Reach 5D Upland Savanna are presented as follows on a reach-specific basis.

5.1 Reach 5E

Herbaceous Vegetation

Reach 5E was not monitored this season because it was broadcast herbicided twice during the 2016 growing season, and burned and reseeded during fall 2016. Reach 5E will be monitored for the next three years to guide management and determine when performance standards are met.

Tree and Shrub Survival

The 2012 Annual Monitoring Report final document stated: "The tree and shrub survival performance standard was met on government property during 2010 and further woody plant monitoring requirements were terminated in accordance with ICN No.13 (Page 9)." Therefore, tree and shrub monitoring was not conducted in Reach 5E during 2016.

Restored Banks

The third year of required bank monitoring for Reach 5E was completed during 2011 and all banks were concluded to be stable. Therefore, no bank monitoring was performed in Reach 5E during 2015.

5.2 Reach 8A

Herbaceous Vegetation

Standards:

- 90% vegetative cover
- <5% cover of invasive weeds
- Native Mean C ≥3.5 during Year three
- Native Mean C and FQI must increase from Year one to three after planting
- No areas > 0.5 m devoid of vegetation
- Three most dominant species native

Actual cover:	61.5%
Actual cover of invasive weeds:	15.1%
Native Mean C value:	2.64
Native FQI:	15.14

Top five species RIV:

- White Panicled Aster (*Symphyotrichum lanceolatum*) 15.7
- Ground Ivy (*Glechoma hederacea*) 11.6
- Sweet Coneflower (*Rudbeckia subtomentosa)* 6.5
- Canadian Clearweed (*Pilea pumila)* 5.5
- Canadian Goldenrod (*Solidago canadensis*) 5.2

Performance standards were not met in Reach 8A because standards were not met for any of the six criteria. **Signoff is not recommended.**

Please see Appendices B, C and D for inventory and quadrat data, and representative photographs.

Tree and Shrub Survival

Reach 8A Bower Elementary School Site: Plantings at the Bower Elementary School site were assessed separately from the naturalized areas. This site is characterized as a manicured landscape and the installed plant material was of a larger size and more specimen form than restoration plantings. All plant material around the school that did not meet acceptance criteria during 2015 were replaced during May 2016 as noted in Table 3.1. All other plant material originally installed during 2013 was noted to be in acceptable condition when the replacement plants were installed. Based on this data and the landscape character of the school site, we recommend signoff and termination of monitoring at the completion of the one-year warranty period for the replacements during May 2017. **Signoff recommended.**

5.3 Reach 8B

Herbaceous Vegetation

Standards:

- 90% vegetative cover
- < 5% cover of invasive weeds
- Native Mean C ≥ 3.5 during Year three
- Native Mean C and FQI must increase from Year one to three after planting
- No areas > 0.5 m devoid of vegetation
- Three most dominant species native

Actual cover:	94.3%
Actual cover of invasive weeds:	21.0%
Native Mean C value:	3.38
Native FQI:	35.12

Top five species RIV:

- Canadian Goldenrod (*Solidago canadensis*) 8.0
- Virginia Wild Rye (*Elymus virginicus)* 4.5
- Canada Wild Rye (*Elymus Canadensis)* 4.6
- Panicled Aster (*Symphyotrichum lanceolatum)* 4.3
- Oswego-Tea (*Monardo fistulosa*) 3.7

Performance standards were not met in Reach 8B because invasive weed coverage exceeded 5%, bare patches exceeded 0.5 square meters, and the native mean C value did not exceed 3.5. **Signoff not recommended.**

Please see Appendices B, C and D for inventory and quadrat data, and representative photographs.

Tree and Shrub Survival

Tables 5.1 and 5.2 indicate individual species survival rates observed in Reach 8B on Forest Preserve property, with locations as documented by the diagrams in Exhibit C. The 2016 monitoring discovered a *Corylus americana* in good

condition within planting stakes that was not included on the original record drawings for Area 12. As this plant must have been installed but not recorded during 2013, it was added to the diagrams and the species counts in Table 5.2.

Overall, woody plant material in the natural areas of Reach 8B had an 87% rate of survival as compared to the 2015 data, categorized as 83% survival of shrubs (170 of 206 plants) and 93% of trees (141 of 151). This overall rate of survival does not meet the established performance criteria of 90% survival. **Signoff not recommended.**

Table 5.1 Survival rates of individual tree species in Reach 8B on Forest Preserve property.

Symbol	Scientific Name	Common Name	Initial Number Planted	Condition Acceptable 2015	Condition Acceptable 2016	Dead 2016	Regrowing from Root 2016	Leader Dead 2016	Missing 2016	Percent Survived
AG	Aesculus glabra	Ohio Buckeye	11	9	9					100%
AT	Asimina triloba	PawPaw	11	9	7			2		78%
BN	Betula nigra	River Birch	23	22	22					100%
CAR	Carpinus caroliniana	Bluebeech	10	7	6	1				86%
CCO	Carya cordiformis	Bitternut Hickory	23	9	9					100%
COV	Carya ovata	Shagbark Hickory	19	13	13					100%
CO	Celtis occidentalis	Hackberry	4	2	1		1			50%
CEC	Cercis canadensis	Eastern Redbud	16	11	10	1				91%
JN	Juglans nigra	Black Walnut	4	1	1					100%
MR	Morus rubra	Red Mulberry	4	3	2	1				67%
OV	Ostrya virginiana	Ironwood	21	10	10					100%
PO	Platanus occidentalis	Sycamore	10	9	9					100%
QA	Quercus alba	White Oak	21	4	4					100%
QB	Quercus bicolor	Swamp White Oak	16	11	10				1	91%
QC	Quercus coccinea	Scarlet Oak	20	3	2			1		67%
QM	Quercus macrocarpa	Bur Oak	32	17	17					100%
QV	Quercus velutina	Black Oak	13	4	3	1				75%
SN	Salix nigra	Black Willow	19	7	6				1	86%
TOTALS			**277**	**151**	**141**	**4**	**1**	**3**	**2**	**93%**

Table 5.2 Survival rates of individual shrub species in Reach 8B on Forest Preserve property.

Symbol	Scientific Name	Common Name	Initial Number Planted	Condition Acceptable 2015	Condition Acceptable 2016	Dead 2016	Regrowing from Root 2016	Leader Dead 2016	Missing 2016	Percent Survived
AF	Amorpha fruiticosa	Indigo bush	21	20	15	2			3	75%
COC	Cepholanthus occidentalis	Buttonbush	11	9	9					100%
CS	Cornus stolonifera	Red Osier Dogwood	26	15	9	6				60%
CA	Corylus americana	American Hazelnut	38	35	34	1				97%
CCG	Crataegus crus-gali	Cockspur Hawthorn	40	15	13	2				87%
CM	Crataegus mollis	Downy Hawthorn	21	4	3	1				75%
PA	Prunus americana	Wild Plum	20	9	8				1	89%
PT	Ptelea trifolitata	Wafer Ash	20	9	8	1				89%
RA	Ribes americanum	Wild Black Currant	11	9	9					100%
RS	Rosa setigera	Illinois Rose	20	19	17	2				89%
SD	Salix discolor	Pussy Willow	18	2	2					100%
SC	Sambucus canadensis	Common elderberry	23	7	6	1				86%
VL	Viburnum lentago	Nannyberry	8	5	4	1				80%
VP	Viburnum prunifolium	Blackhaw	20	19	17	1			1	89%
XA	Xanthoylum americanum	Prickly Ash	30	29	16	12			1	55%
TOTALS			**327**	**206**	**170**	**30**	**0**	**0**	**6**	**83%**

Bank Stability

Data from US Geological Survey Gage #5540095 located near the Warrenville Dam indicates that five events at or greater than the 2-year storm (1,090 cfs) occurred between November 2013 and November 2016 per Figure 5.1. Arrows on the graph below indicate these events.

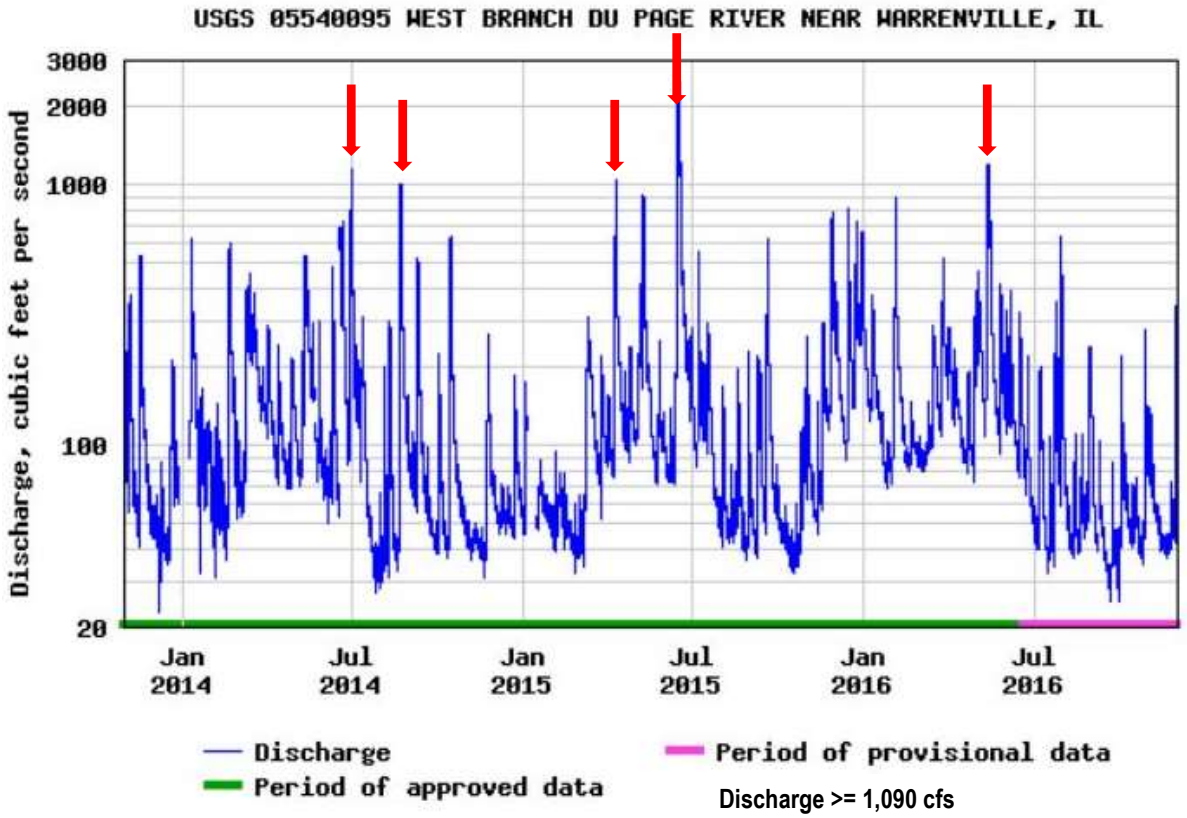


Figure 5.1: Events greater than 2-year storm (1,090 cfs) at USGS Gage #5540095, November 2013 – November 2016.

The condition of banks and structures were stable within the study area except for two locations on Ferry Creek at McDowell Grove Forest Preserve.

The first erosion area occurred along an approximately 120' long stretch of the right bank where Ferry Creek discharges into the West Branch of the DuPage River per Figure 5.2. It appeared as if rock placed on the toe had fallen down into the channel, resulting in toe erosion and erosion of the unsupported bank above the toe per Figure 5.3.

The second erosion area occurred on either side of a riffle / grade control structure in Ferry Creek approximately 700 feet upstream of the confluence of Ferry Creek and the West Branch of the DuPage River. Figure 5.2 indicates the location of the eroded area on Ferry Creek. Figures 5.4 is a photograph of the eroded wings of the referenced riffle.

Representative photographs of stable reaches are included in Appendix D.

Figure 5.2: Approximate limits of eroded banks on Ferry Creek.

Figure 5.3: Toe erosion on right bank of Ferry Creek, north of the Area 9 peninsula

Note: Arrow indicates the general direction in which flows have eroded the bank.

Figure 5.4: Looking downstream at the riffle and the eroded right bank

5.4 Mack Road Staging Area and Reach 5D Upland Savanna

Mack Road Staging Area Herbaceous Vegetation

Monitoring results below apply to the Mack Road Staging Area. No management was conducted in this area during 2016.

Standard:

- 90% vegetative cover

Actual cover:	107.2%
Native Mean C value:	3.14
Native FQA:	14.71

Top five species RIV:

- Big Bluestem (*Andropogon gerardii*): 36.5
- Indiangrass (*Sorghastrum nutans*): 30.9
- Canadian Goldenrod (*Solidago canadensis*) 8.2
- Late Goldenrod (*Solidago gigantea*) 3.0
- Wand Panic Grass (*Panicum virgatum*) 2.2

Mack Road Reach 5D Upland Savannah Herbaceous Vegetation

Monitoring results below apply to Reach 5D Upland Savanna which was seeded with an Upland Savanna mix during June and additional cover crop during July 2016.

Standard:

- 90% vegetative cover

Actual cover: 79.0%

Signoff is not recommended for Reach 5D Upland Savanna because this area was re-seeded during 2016 following blanket-herbiciding during 2015 and spot-herbiciding during spring 2016. All performance standards were met for the Mack Road Staging Area but not for Reach 5D. Access through the Staging Area is needed for management of the Reach 5D Upland Savanna; therefore, monitoring will continue in both areas until the Upland Savanna meets criteria for signoff.

Please see Appendices B, C and D for inventory and quadrat data, and representative photographs.

Tree and Shrub Survival

At the Mack Road Staging Area, the following individual species survival rates were observed, with locations per Tables 5.3 and 5.4 and as documented by the diagrams in Exhibit C. Note, Table 5.3 corrects an addition error from the 2015 report, with 38 total *Quercus alba* initially planted as compared to 40 mistakenly reported during 2015.

Overall, woody plant material at the Mack Road Staging Area had a 91% rate of survival, categorized as 86% survival of shrubs (139 of 162 plants) and 100% of trees (94 of 94). This overall rate of survival currently meets the established performance criteria of 90% survival. **Signoff recommended when herbaceous area of Reach 5D Upland Savanna meets performance criteria**

Table 5.3 Individual tree species survival rates at the Mack Road Staging Area.

Symbol	Scientific Name	Common Name	Initial Number Planted	Condition Acceptable 2015	Condition Acceptable 2016	Dead 2016	Regrowing from Root 2016	Leader Dead 2016	Missing 2016	Percent Survived
CCO	Carya cordiformis	Bitternut Hickory	27	19	19					100%
COV	Carya ovata	Shagbark Hickory	25	23	23					100%
JN	Juglans nigra	Black Walnut	3	3	3					100%
OV	Ostrya virginiana	Hophornbeam	25	21	21					100%
QA	Quercus alba	White Oak	38	7	7					100%
QM	Quercus macrocarpa	Bur Oak	54	10	10					100%
QV	Quercus velutina	Black Oak	38	11	11					100%
TOTALS			**210**	**94**	**94**	**0**	**0**	**0**	**0**	**100%**

Table 5.4 Individual shrub species survival rates at the Mack Road Staging Area.

Symbol	Scientific Name	Common Name	Initial Number Planted	Condition Acceptable 2015	Condition Acceptable 2016	Dead 2016	Regrowing from Root 2016	Leader Dead 2016	Missing 2016	Percent Survived
CA	Corylus americana	American Hazelnut	78	72	72					100%
CCG	Crataegus crus-gali	Cockspur Hawthorn	20	17	15				2	88%
CM	Crataegus mollis	Downy Hawthorn	13	8	8					100%
LP	Lonicera prolifera	Yellow Honeysuckle	12	4	4					100%
MI	Malus ioensis	Iowa Crabapple	16	9	9					100%
PA	Prunus americana	Wild Plum	25	12	7	3			2	58%
PV	Prunus virginiana	Choke Cherry	22	15	8	5			2	53%
PT	Ptelea trifolitata	Wafer Ash	19	3	2	1				67%
VP	Viburnum prunifolium	Blackhaw	16	16	11	3			2	69%
XA	Xanthoxylum americanum	Prickly Ash	16	6	3	3				50%
TOTALS			**237**	**162**	**139**	**15**	**0**	**0**	**8**	**86%**

6.0 Discussion

6.1 Herbaceous Vegetation

Reach 5E

Reach 5E was not monitored during 2016 due to blanket-herbiciding during the growing season and burning and reseeding during the fall.

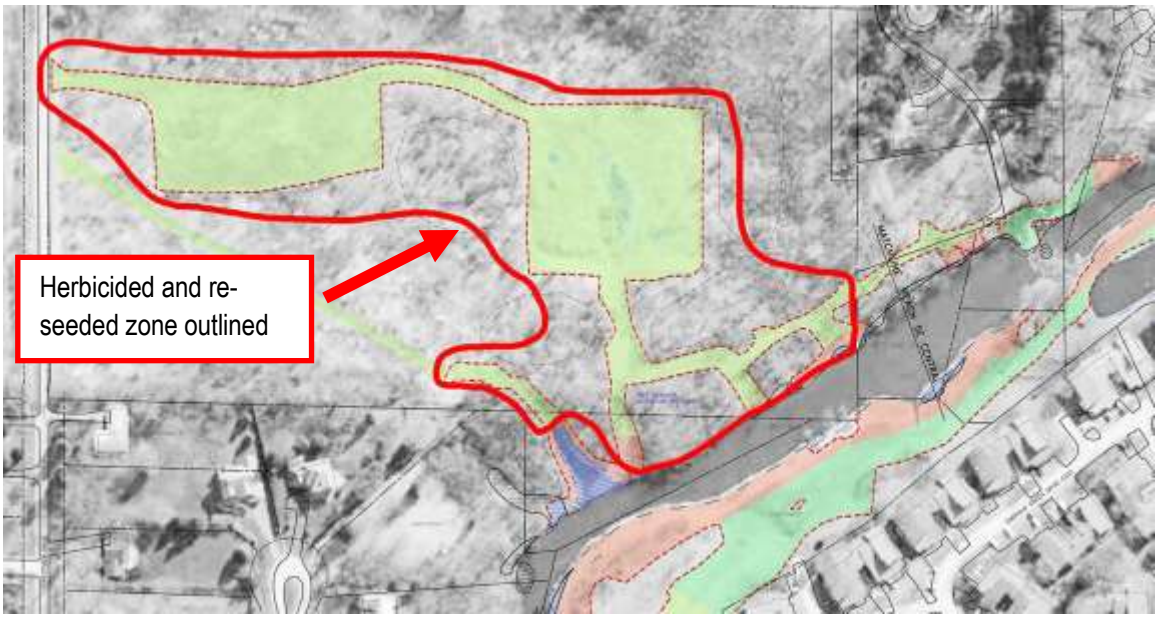


Figure 6.1: Reach 5E area that was herbicided and re-seeded during 2016.

Reach 8A

Reach 8A did not meet any of the performance standards. The native mean C was 2.64, ground cover was 61.5%, invasive weeds occupied 15.1% of herbaceous ground cover, and large patches of bare ground exceeded 0.5 square meters. One performance standard was met in 2015 (>90% vegetation cover). Total cover and non-native (weed) cover were lower in 2016 than in 2015 and reed canary grass was no longer a dominant due to aggressive management of these sites this season. All of these sites were herbicided this season and most were reseeded and are expected to have greater cover in 2017. Weeds present within the reach along the river include reed canary grass, giant ragweed, teasel, Canadian thistle, *Phragmites*, and common buckthorn. Garlic mustard and honeysuckle are common in the woods of R38-3. Please note that signoff is considered separately for Reach 8A and Reach 8B per the 2015 Annual Monitoring Report.

The following summarizes the condition and recommended treatments for Reach 8A by area:

- Pod R8-3. Site was burned during April 2016. Garlic mustard was pulled and later spot-herbicided. Honeysuckle was cut and treated in the woods. Reed canary grass and other weeds were spot-herbicided throughout the growing season. Giant ragweed was cut along the river. Recommendations include removing remaining honeysuckle (but keeping coralberry), monitoring and managing garlic mustard in the woods in spring (Q2 2017), cutting and treating elm and silver maple saplings, and monitoring and herbiciding reed canary grass along the river during the spring (Q2 2017) as needed.

- Area 4. Entire area (dominated by reed canary grass) was killed off with herbicide during the growing season and was burned and re-seeded during fall 2016. Recommendations include mowing and spot herbiciding invasive species during 2017 as needed.

- Areas 5. Site was burned during April 2016 and over-seeded during June followed by spot-herbiciding of invasive species including reed canary grass, Canada thistle, and *Phragmites*. Giant ragweed was also cut. Recommendations for 2017 include continued spot treating of invasive species as needed.

- Area 6. This site was also burned during April 2016 and over-seeded during June. Invasive species, including reed canary grass, Canada thistle, teasel, purple loosestrife, cattail, and *Phragmites* were spot-herbicided or hand-wicked during the growing season. Recommendations for 2017 include spot-herbicide treatment of *Phragmites* and purple loosestrife in the T14 area and reed canary grass in the T15 area.

Reach 8B

Reach 8B met or exceeded three out of six performance standards. The ground cover was 94%, the three most dominant species were native, and the Native Mean C and FQI increased in 2016. However, the native Mean C was 3.12, invasive weeds composed 21.0% of the herbaceous ground cover, and patches of bare ground exceeding 0.5 square meters. This is a substantial improvement from last year (2015) when only one (>90% vegetation cover) of five performance standards were met. The most significant improvements include the reduction of non-native (weed) cover to 21% (from 36%) and all three dominants species are natives and no longer includes reed canary grass. Weeds present within the reach include sweet clover, common ragweed, giant ragweed, Canada thistle, crown vetch, clover, cattail, *Phragmites*, and purple loosestrife. Woody weedy species include honeysuckle and buckthorn, and box elder, black locust, silver maple, and cottonwood saplings and re-sprouts. Clover, crown vetch, sweet clover and *Phragmites*, were dense in many area and cottonwood saplings were common throughout, but all were reduced substantially in 2016 through aggressive management (mowing and herbiciding).

The following summarizes the condition and recommended treatments for Reach 8B by area:

- Area 11: This area is a narrow strip along the south and east banks of the DuPage River near the McDowell Grove parking area off Raymond Drive. The area was burned in early April, and reed canary grass, purple loosestrife, Canada thistle, and bluegrass were spot herbicided during June, July, and October. Giant ragweed, mugwort, and Queen Anne's lace were mowed in August. North of the drive (T1), the area is dominated by native forbs but needs more grasses to add fine fuel to allow the area to burn. Recommendations include mowing, a prescribed burn, and seeding with native grasses (e.g. *Elymus virginicus*) during spring 2017 to improve cover and the fuel load for prescribed burning. Silver maple and black locust saplings should also be removed from this area. South of the drive (T2), the area is developing well and dominated by native species. Honeysuckle and purple loosestrife will be removed and Canada goldenrod will be reduced next spring (2017). The mowed access area was herbicided during fall 2016. It will be herbicided again during spring 2017 and reseeded. FPDD should be informed that the area is part of WCERT and should not be used.

- Area 12. This is the largest (8.98 acres) area within Reach 8B. The area was burned in early April and over-seeded on June 9th. Clover, sweet clover, thistle and crown vetch were spot herbicided before the seeding. The site was spot herbicide four times after the seeding and targeted the same species plus reed canary grass, purple loosestrife, *Phragmites*, cattail, cottonwood, and bluegrass. In addition, the site was spot

mowed during June, July and August targeting annual and biennial weeds (e.g. Queen Anne's lace and ragweed) and cottonwood re-sprouts. Both T5 and T7 areas are dominated by native species with few invasive species and will only require routine management (e.g. spot herbiciding and burning). Native species establishment is not as high in the T6 and T8 areas; therefore, it is recommended that these areas be mowed, burned and reseeded with a grass-heavy native mix during spring 2017, except where *Elymus virginicus* is already heavy. Numerous trees and shrubs have been installed in the T6 area and caution should be taken during the prescribed burn not to damage these plants. These management areas are narrow strips, so to ensure the correct areas are being managed in the future, Tallgrass will use a GPS to locate management areas. Management in the T3 and T4 areas has been very effective as cottonwood, clover, sweet clover, Canada thistle and *Phragmites* all reduced ~70-90% over the growing season. In addition, reed canary grass and blue grass (Poa spp.) were spot-herbicided late in the season. These grasses and other non-native cool-season grasses (e.g. Hungarian brome and tall fescue) and *Phragmites* will be spot herbicided next spring. The swales and the area east of T4 in particular will be monitored closely and managed as needed. All areas killed off from herbiciding will be reseeded next spring (2017) with the appropriate native seed mixture. Canada goldenrod at the north end of this site. In order to reduce this aggressive species, this area will be mowed and burned early next spring followed with herbiciding of its basal rosettes later in the spring. All areas affected by Canada goldenrod management will be reseeded with the appropriate native seed mixture. Canada goldenrod will then be mowed/cut again during late summer (i.e. August) next season (2017) to prevent it from setting seed.

Mack Road Staging Area and Reach 5D Upland Savanna

The Mack Road Staging Area achieved the performance standard of 90% vegetative cover. Big bluestem, Indian grass, and Canadian goldenrod were the three most abundant species based on cover and RIV.

The Reach 5D Upland Savanna area was blanket-herbicided during 2015, and spot herbicided and re-seeded with an Upland Savanna mix in June and a cover crop in July of 2016. Reach 5D did not meet the performance standard of 90% vegetation cover. Signoff for both areas will be held until the Reach 5D Upland Savanna meets performance criteria. This area will be inspected during the spring to determine appropriate management.

6.2 Tree and Shrub Survival

The Mack Road / Reach 5D Upland Savanna site is meeting the established performance criteria of 90% survival. However, trees performed significantly better than shrubs. For shrubs, 15 plants were noted to be dead, while another eight plants were noted to be missing. Given that many of the shrubs are still small in stature compared to the prairie grasses surrounding them and that the existing staking materials were observed to be in poor condition and falling apart during the 2015 monitoring, it is highly probable that the missing plants were broken off or trampled by the maintenance contractor during work to remove and reset staking materials. It is possible that these shrubs may regrow from the root if they were only damaged. Lowest survival rates were observed for prickly ash (*Xanthoxylum americanum*, 50%), choke cherry (*Prunus virginiana*, 53%), and wild plum (*Prunus americana*, 58%).

The Reach 8 site did not meet the established performance criteria of 90% survival in 2016. As with the Mack Road site, trees performed better than shrubs. Since the 2015 monitoring, four trees died, one was damaged by beaver and is re-growing from the root, three trees had their leader die, and two trees were missing. The missing trees were located near the river, which may indicate beaver damage that was impossible to locate in the thick vegetation. No pattern was apparent in the tree losses, as multiple species were impacted. For shrubs, 30 plants were noted as

dead, while another six plants were noted as missing. Several of the losses appeared to be casualties of ongoing herbaceous management activities. Lowest shrub survival rates were observed for prickly ash (*Xanthoxylum americanum*, 55%) and red osier dogwood (*Cornus stolonifera*, 60%).

6.3 Restored Banks

All reaches with the exception of the two areas indicated under results were stable. While several photographs show exposed soil at the toe of the bank, the soil is actually sediment that has deposited on top of the cobble toe.

The two eroded reaches both occurred on Ferry Creek in the McDowell Grove Forest Preserve.

The referenced eroded bank on the north side of the confluence of Ferry Creek and the West Branch of the DuPage River appeared to have been caused by high velocities on an outside bend, where the flow was constricted between the steep bank of the outside bend and the Area 9 mudflat peninsula between the confluence of the two waterways. The tributary appeared to be in the process of deepening as evidenced by a pool immediately below the eroded bank, and widening as evidenced by the erosion of the outside bank. In a natural setting, a stream would continue to deepen and / or widen until a floodplain bench is formed and the stream reaches equilibrium. It is recognized that allowing the stream to reach equilibrium without intervention would take many years, and result in further bank failure and downstream sedimentation.

It appeared as if the referenced eroded riffle structure on Ferry Creek approximately 700 feet upstream of the confluence of the creek with the DuPage River was not adequately tied into the adjacent bank. While the riffle structure itself was stable and setting grade as designed, water during higher flows appeared as if it had eroded around the wings of the riffle structure. The mass of woody debris at the upstream end of the riffle structure that can be observed in the photograph in Figure 5.4 suggests that this riffle structure tends to collect debris that backs up water behind the riffle structure. Backwater created by a debris dam at this location would put additional pressure on the wings of the riffle structure which probably has contributed to the erosion observed.

WCERT has met on-site with USEPA and Local Communities and have general concurrence to repair both referenced stretches. SmithGroupJJR and AES are in the process of developing restoration plans. Restoration implementation is project to occur during Q4 2017 or Q1 2018.

7.0 Conclusions and Recommendations

The following summarizes conclusions for each reach based on 2016 monitoring results and site inspections, and proposes management activities for specific areas for 2017. A projected schedule for 2017 monitoring and management activities is included in Appendix E.

7.1 Herbaceous Vegetation

Vegetation monitoring results and recommended management activities by reach are summarized in Table 7.1. Management activities are summarized by task in Table 7.3 below.

Reach 5E

Performance: Reach 5E was not monitored during 2016 because it was blanket-herbicided during the growing season in preparation for reseeding. The site was then burned and reseeded during the fall.

Recommendations:

- Mow reseeded areas during late spring and mid-summer
- Spot herbicide reseeded areas as needed during 2017.

Reach 8A

Performance: Reach 8A failed to meet all performance standards. Note, signoff will be considered separately for Reach 8A and Reach 8B, per the 2015 Annual Monitoring Report.

Recommendations: Pod R8-3

- Remove remaining honeysuckle from woods. Do not remove coralberry.
- Monitor and manage garlic mustard during early spring.
- Cut and treat elm and silver maple saplings near river.
- Monitor reed canary grass near river during spring and herbicide as needed.

Recommendations: Area 4

- Area was burned and reseeded during fall 2016.
- Mow during late spring and mid-summer 2017.
- Spot-herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 5

- Area was burned during April and over-seeded during June 2016.
- Spot herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 6

- Area was burned during April and over-seeded during June 2016.
- Spot-herbicide *Phragmites* and purple loosestrife (T14 area).
- Spot-herbicide reed canary grass (T15 area).

Reach 8B

Performance: Reach 8B met or exceeded three out of six performance standards. The ground cover was 94%, the three most dominant species were native, and the Native Mean C and FQI increased in 2016. However, the native Mean C was 3.12, invasive weed composed 21.0% of the herbaceous ground cover, and patches of bare ground exceeded 0.5 square meters.

Recommendations: Area 11 – T1 (North of drive)

- Mow, conduct a prescribed burn, and then seed with native grasses (e.g. *Elymus virginicus*) during the spring.
- Cut and herbicide silver maple and black locust seedlings and saplings.

Recommendations: Area 11 – T2 (South of drive)

- Herbicide and eradicate honeysuckle and purple loosestrife. Reduce Canada goldenrod by 75% using herbicide and mowing.
- Herbicide and reseed (with Open Floodplain mix) mowed access area during spring.
- Inform FPDDC that area is part of WCERT and should not be used.

Recommendations: Area 12 – T3 & T4

- Spot herbicide cool season grasses (e.g. Kentucky bluegrass, Hungarian brome, and tall fescue, reed canary grass) and *Phragmites* next spring, especially in the swales and east of T4.
- Reseed killed off areas during spring with Upland Prairie m ix.
- Manage Canada goldenrod on north end:
    - Mow and burn during spring 2017.
    - Herbicide Canada goldenrod basal rosettes during spring after burn.
    - Reseed killed off areas during spring with specified seed mixture.
    - Mow/cut Canada goldenrod late summer 2017 (i.e. August) to prevent it from setting seed.

Recommendations: Area 12 – T5 & T7

- Areas are dominated by native species with few invasive species.
- Spot herbicide invasive species as needed during spring and summer 2017.

Recommendations: Area 12 – T6 & T8

- Mow, burn, and reseed with a grass heavy native mix next spring (2017), except where *Elymus virginicus* is already heavy.
- Numerous trees and shrubs have been installed in the T6 area and caution should be taken during the prescribed burn not to damage these plants.

Mack Road – Staging Area

Performance: Mack Road staging area achieved its performance standard (>90% vegetation cover), but will not receive signoff until Reach 5D-Upland Savanna also meets the same performance standard.

Recommendations:

- Conduct prescribed burn during spring 2017. Precautions need to be taken to avoid damaging installed trees and shrubs.

Reach 5D Upland Savanna

Performance: Reach 5D-Upland Savanna did not meet the performance standard (>90% vegetation cover).

Recommendations:

- Mow seeded areas during late spring and mid-summer.
- Spot herbicide weeds as necessary during spring and summer 2017.
- Monitor at end of summer to assess establishment.

Table 7.1 2016 vegetation monitoring results by reach and management recommendations for 2017

Reach	Standard	2016 Results			2017 Management Recommendations	Recommend Signoff?
5D Upland Savanna	90% cover	79.0%			Selectively herbicide weeds Q2-Q3. Re-seed Q2, if needed;	Not recommended due to <90%% cover.
8A	90% cover	61.5%			**Pod R8-3**: Selectively herbicide weeds Q2-Q3.Cut and herbicide woody weeds Q2. **Area 4-6**: Selectively herbicide weeds Q2-Q3.	Not recommended. Percent cover is under 90%, invasive weeds exceed 5%, Native C is below 3.5 and patches of bare ground exceeds 0.5 sq. meters
	<5% weeds	15.1%				
	Native C > 3.5	2.64				
	FQI	15.14				
	C and FQI increase	No				
	No Bare ground ≥ 0.5 square meter	No				
	3 most dominant species native?	Species	RIV	Native?		
		SYMLAN	15.7	Yes		
		GLEHED	11.6	No		
		RUDSUB	6.5	Yes		
8B	90% cover	94.3%			**Area 11**: Selectively herbicide weeds Q2-Q3. Cut and herbicide woody weeds Q2. Re-seed Q2. **Area 12**: Mow, burn, selectively herbicide, and supplemental seed Q2; Mow Q3.	Not recommended. Invasive weeds exceed 5%, Native C is below 3.5, and patches of bare ground exceeds 0.5 square meters
	<5% weeds	21.0%				
	Native C > 3.5	3.38				
	FQI	35.12				
	C and FQI increase	Yes				
	No Bare ground ≥ 0.5 square meter	No				
	3 most dominant species native?	Species	RIV	Native?		
		SOLCAN	8	Yes		
		ELYCAN	4.6	Yes		
		ELYVIR	4.5	Yes		
Mack Road Staging Area	90% cover	107.2%			No management recommended.	Not recommended. Standard met, but signoff to be concurrent with Reach 5D Upland Savanna

Table 7.2 2015 versus 2016 vegetation monitoring results by reach

Reach	Standard	2015 Results			2016 Results			Change
5D Upland Savannah	90% cover	0.0%			79.0%			79.0%
8A	90% cover	111.6%			61.5%			-50.1%
	<5% weeds	38.8%			15.1%			-23.7%
	Native C > 3.5	2.84			2.64			-0.20
	Native FQI	15.81			15.14			-0.67
	No Bare ground ≥ 0.5 square meter	No			No			No change
	3 most dominant species native?	Species	RIV	Native?	Species	RIV	Native?	No change- 2/3 species are native
		PHAARU	12.4	No	SYMLAN	15.7	Yes	
		SYMLAN	12.1	Yes	GLEHED	11.6	No	
		SOLALT	11	Yes	RUDSUB	6.5	Yes	
8B	90% cover	106.3%			94.3%			-12.0%
	<5% weeds	36.1%			21.0%			-15.1%
	Native C > 3.5	3.22			3.38			0.16
	FQI	32.99			35.12			2.13
	No Bare ground ≥ 0.5 square meter	No			No			No
	3 most dominant species native?	Species	RIV	Native?	Species	RIV	Native?	Improved- 3/3 species native
		SOLALT	9.2	Yes	SOLCAN	8	Yes	
		PHAARU	5.2	No	ELYCAN	4.6	Yes	
		ELYVIR	4.5	Yes	ELYVIR	4.5	Yes	
Mack Road Staging Area	90% cover	106.3%			107.2%			0.9%

Table 7.3 Summary of proposed 2017 management activities by task

Task	Reach(s)	Unit	Unit(s)	Schedule 2016
Burn	8B-Area 12	Acres	8.98	Q1
	8B-Area 11	Acres	0.53	Q1
Spot Herbicide (2-3 visits throughout the growing season)	8B-Area 12	Acres	8.98	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	8A-Area 6	Acres	0.23	Q2-Q3
	8A-Area 5	Acres	0.28	Q2-Q3
	8A-Area 4	Acres	0.35	Q2-Q3
	8A-Pod R8-3	Acres	0.14	Q2-Q3
	5D Upland Sav	Acres	0.23	Q2-Q3
	5E	Acres	4.57	Q2-Q3
Supplemental Seeding	8B-Area 12	Acres	0.23	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	5D Upland Sav	Acres	0.23	Q2-Q3
Mow 1-2x	8B-Area 12	Acres	8.98	Q2-Q3
	8B-Area 11	Acres	0.53	Q2-Q3
	8A-Area 4	Acres	0.35	Q2-Q3
	5E	Acres	0.23	Q2-Q3
Mow and Rake Around Surviving Woody Material to protect from prescribed burning.	8B	Each	378	Q1

7.2 Tree and Shrub Survival

The Mack Road / Reach 5D Upland Savanna site is currently meeting performance standards. No maintenance activities are required at this time. However, the area will continue to be monitored until the herbaceous vegetation of the Reach 5D Upland Savanna meets criteria, which will be eligible for completion at the end of the 2018 growing season. If the woody vegetation continues to meet performance criteria at that time, the site will be accepted and the 2015 punch list replacements will be installed.

Although Reach 8 is just short of meeting performance standards, we do not recommend providing replacement trees and shrubs at this time. Given that many of the woody plant losses appeared to be due to the intense management activities needed to control the herbaceous vegetation, any replacements made at this time will likely be impacted by the ongoing maintenance efforts. As Reach 8B herbaceous vegetation will not be eligible for signoff until fall 2018, we recommend to continue to assess the woody survival until that time in order to determine appropriate replacements in addition to the 2015 punch list.

We recommend to formally terminate monitoring at the Bower Elementary School site during May 2017, after completion of the one year planting warranty for replacements installed during 2016. Given the traditional landscape character of this site, it does not lend itself to the 90% survival criteria applied to the other restoration locations, and 2017 represents over three years since planting activities were completed during 2013. Industry standard for traditional landscape installation provides a one-year warranty on typical nursery stock plant material, such as that installed at the school site. This one year period was the standard used for similar commercial and residential properties in previously completed reaches.

7.3 Restored Banks

All reaches with the exception of the two areas on Ferry Creek indicated above were stable. While previous photographs showed exposed soil at the toe of the bank, the soil is actually sediment that has deposited on top of the cobble toe.

Management Recommendations:

1. Stable Banks. No additional monitoring should be required of stable stretches of bank within the study area as they have passed through several events of the required size. This includes the entire West Branch DuPage River.

2. Eroded Bank. Based on field observations and estimates, it is recommended that the referenced eroded bank at the confluence of Ferry Creek and the West Branch of the DuPage River be repaired. This preliminary recommendation entails protecting the toe of the bank with a row of 24" boulders, and creating an approximately 8-foot wide shelf from the water side of the top of the boulders back into the bank. The boulders will hold the toe of the slope better than the designed rock toe considering the pool that has formed in the creek proximate to the bank. The 8-foot wide shelf will create a floodplain bench that will relieve pressure from the bank during higher flows. A topographic was completed of this area in fall 2016 to obtain more precise measurements and assist with rock sizing and volume estimates. Proposed plans are underway and will be completed during 2017 for implementation during Q4 2017.

3. Eroded Riffle. Based on field observations and estimates, it is recommended that the referenced eroded riffle located approximately 700 feet upstream of the confluence of Ferry Creek and the West Branch of the DuPage River be repaired by extending the wings of the riffle approximately 40 feet on either side of the riffle. A topographic was completed of this area in fall 2016 to obtain more precise measurements and assist with rock sizing and volume estimates. Proposed plans are underway and will be completed during 2017 for implementation during Q4 2017.

7.4 Projection for Future Maintenance and Monitoring Activities

Maintenance and monitoring activities will continue until all areas meet established performance criteria and receive signoff. Based on the 2015 recommendation to blanket-herbicide and reseed, Reach 5E, Reach 5D Upland Savanna, and Reach 8A Area 4 will require three additional years of monitoring after seeding is complete in order to verify that the herbaceous vegetation establishment is successful. Reach 5D was reseeded June 4, 2016, and thus may be considered for signoff by the end of the 2018 growing season. Because access to Reach 5D is through the Mack Road Staging Area, this entire area will also be maintained and monitored through at least the 2018 growing season. Reach 5E and Reach 8A Area 4 were reseeded November 30, 2016, following summer herbicide applications. Therefore, the required three full growing seasons for monitoring of these areas is anticipated to end during fall 2019. Also, because smaller subareas are not considered separately for signoff, all other areas of Reach 8A will also require monitoring through 2019. Reach 8B may be considered for signoff of herbaceous vegetation during fall 2018, as agreed upon by WCERT correspondence dated February 11, 2016, and will be monitored and managed until that time.

Warranty assessments for tree and shrub replacements will be completed for Bower Elementary School and Reach 7 during May 2017. However, this warranty assessment is not considered a monitoring activity under the standard maintenance and monitoring protocols. Monitoring of trees and shrubs in Reach 8B and the Mack Road Staging Area will continue until these areas fully meet performance criteria, including the herbaceous vegetation as discussed above. Per the 2015 monitoring results, the minimum woody plant replacements required as a punch list item at the end of the monitoring are documented in Table 7.4 – 7.5. Other replacements may be required based on woody plant monitoring results at the time the herbaceous layer of these sites meets acceptance criteria.

Table 7.4 Minimum woody plant replacements required by the 2015 monitoring results for Mack Road/Reach 5D Upland Savanna.

Symbol	Scientific Name	Common Name	Replacements Required 2015
TREES:			
CCO	Carya cordiformis	Bitternut Hickory	8
COV	Carya ovata	Shagbark Hickory	2
OV	Ostrya virginiana	Hophornbeam	4
QA	Quercus alba	White Oak	31
QM	Quercus macrocarpa	Bur Oak	44
QV	Quercus velutina	Black Oak	27
TOTAL TREES			**116**
SHRUBS:			
CA	Corylus americana	American Hazelnut	6
CCG	Crataegus crus-gali	Cockspur Hawthorn	3
CM	Crataegus mollis	Downy Hawthorn	5
LP	Lonicera prolifera	Yellow Honeysuckle	8
MI	Malus ioensis	Iowa Crabapple	7
PA	Prunus americana	Wild Plum	13
PV	Prunus virginiana	Choke Cherry	7
PT	Ptelea trifolitata	Wafer Ash	16
XA	Xanthoxylum americanum	Prickly Ash	10
TOTAL SHRUBS			**75**

Table 7.5 Minimum woody plant replacements required by the 2015 monitoring results for Reach 8B.

Symbol	Scientific Name	Common Name	Replacements Required 2015
TREES:			
AG	Aesculus glabra	Ohio Buckeye	2
AT	Asimina triloba	PawPaw	2
BN	Betula nigra	River Birch	1
CAR	Carpinus caroliniana	Bluebeech	3
CCO	Carya cordiformis	Bitternut Hickory	14
COV	Carya ovata	Shagbark Hickory	6
CO	Celtis occidentalis	Hackberry	2
CEC	Cercis canadensis	Eastern Redbud	5
JN	Juglans nigra	Black Walnut	3
MR	Morus rubra	Red Mulberry	1
OV	Ostrya virginiana	Ironwood	11
PO	Platanus occidentalis	Sycamore	1
PA	Prunus americana	Wild Plum	11
QA	Quercus alba	White Oak	17
QB	Quercus bicolor	Swamp White Oak	5
QC	Quercus coccinea	Scarlet Oak	17
QM	Quercus macrocarpa	Bur Oak	15
QV	Quercus velutina	Black Oak	9
SN	Salix nigra	Black Willow	12
TOTAL TREES			**137**
SHRUBS:			
AF	Amorpha fruiticosa	Indigo bush	1
COC	Cepholanthus occidentalis	Buttonbush	2
CS	Cornus stolonifera	Red Osier Dogwood	11
CA	Corylus americana	American Hazelnut	3
CCG	Crataegus crus-gali	Cockspur Hawthorn	25
CM	Crataegus mollis	Downy Hawthorn	17
PT	Ptelea trifolitata	Wafer Ash	11
RA	Ribes americanum	Wild Black Currant	2
RS	Rosa setigera	Illinois Rose	1
SD	Salix discolor	Pussy Willow	16
SC	Sambucus canadensis	Common elderberry	16
VL	Viburnum lentago	Nannyberry	3
VP	Viburnum prunifolium	Blackhaw	1
XA	Xanthoylum americanum	Prickly Ash	1
TOTAL SHRUBS			**110**

It is recommended that the entire stretch of Ferry Creek be monitored for one year following the remediation of the identified eroded banks, assuming that at least one bankfull discharge storm event occurs. If the repairs on Ferry Creek are completed during Winter 2017-2018, the creek will be ready for signoff by Spring 2019. Bank monitoring on the West Branch DuPage River is complete.

8.0 References

ARCADIS. 2012. *2012 Annual Monitoring Report - Reaches 5C, 5D, 5E and 6*. Kress Creek/West Branch DuPage River Site, DuPage County, IL

BBL. 2005. *Conceptual Mitigation and Restoration Design Plan.* Kress Creek/West Branch DuPage River Site and the River Portion of the Sewage Treatment Plant Site, DuPage County, IL.

Swink F., Wilhelm G. 1994. *Plants of the Chicago Region*. Indianapolis (IN): Indiana Academy of Science. 921 p.

Darbyshire, S.J., C.E. Wilson et al. 2003. *The Biology of Invasive Alien Plants in Canada. 1. Eriochloa villosa (Thunb.) Kunth.* Canadian Journal of Plant Science. 2003, 83(4): 987-999.

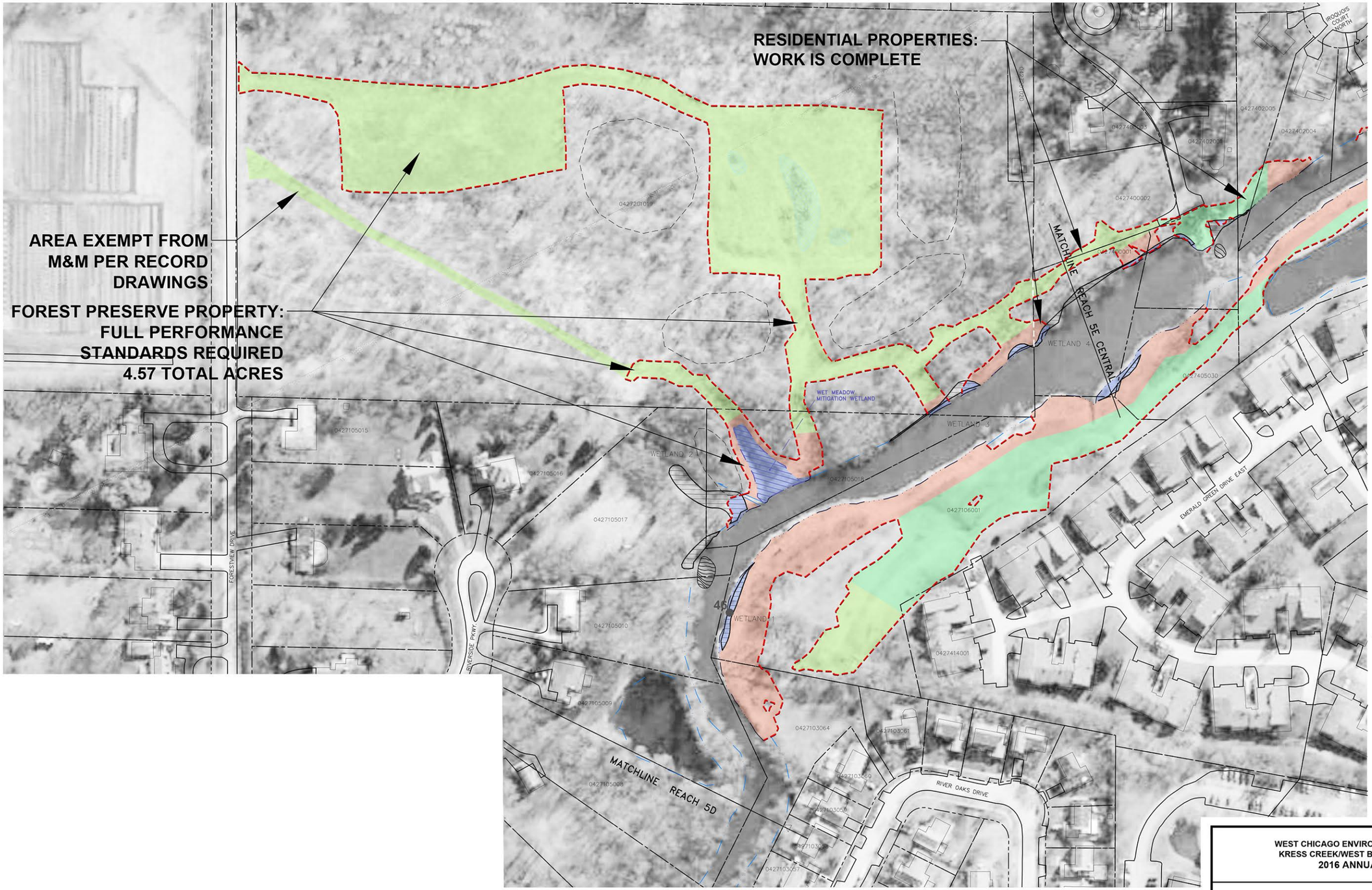
SMITHGROUP JJR. 2016. 2015 Annual Monitoring Report- Reaches 5E, 7, 8, the Mach Road Staging Area, and the Route 59 bridge Area of the Kress Creek/ West Brand DuPage River Site.

2016 Annual Monitoring Report

Reaches 8A, 8B, 5D and
the Mack Road Staging Area,
of the Kress Creek /
West Branch DuPage River Site

EXHIBIT A

Base Maps



LEGEND:

- LIMIT OFACTUAL DISTURBANCE
- PROPERTY LINE
- 0427201019 RESIDENTIAL PROPERTY REFERENCE NUMBER
- ARCHEOLOGICAL SITE
- WETLAND BOUNDARY
- WET MEADOW WETLAND
- MITIGATION WETLAND
- RESTORED UPLAND SAVANNA
- RESTORED WETLAND
- RESTORED SHADY FLOODPLAIN
- RESTORED LAWN
- RESTORED SAVANNA AND OPEN FLOODPLAIN
- EDGE OF WATER
- POOL

NOTE:

1. BASE MAP PROVIDED BY TRONOX LLC IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK. TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINE WERE DEVELOPED BY BLASLAND, BOUCK & LEE FROM SURVEY DATA PROVIDED BY PROSOURCE TECHNOLOGIES, INC. (NOW KNOWN AS CARLSON PSI), DUPAGE COUNTY, AND TRONOX.

0 80' 160'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING B-12A, TRACER NO. B0071030/0000/00026/DWG/71030G10.DWG, DATED 5/21/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

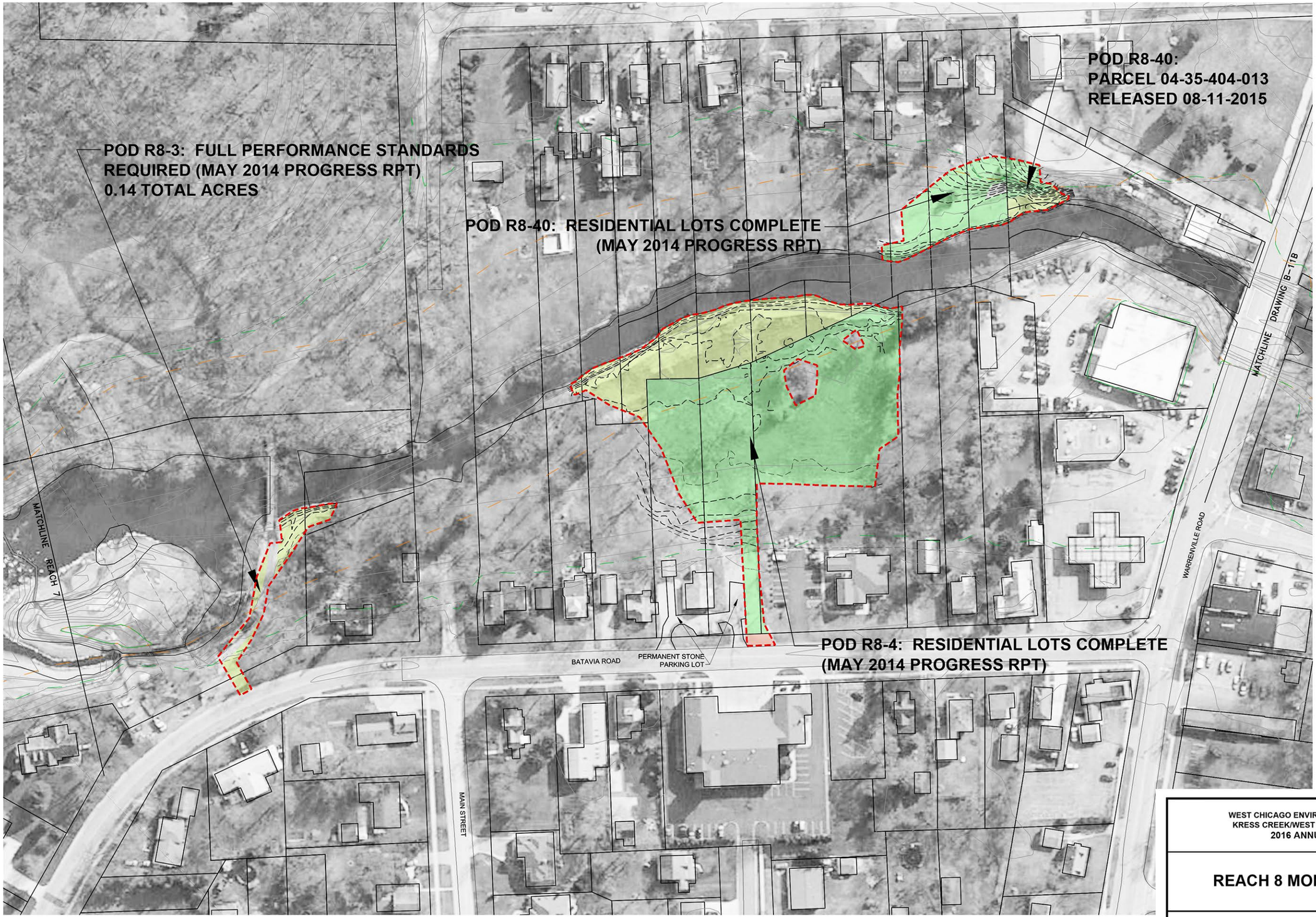
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 5E MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
12-1

EXHIBIT A



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH LAWN SEED PER TABLE 7 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH PRAIRIE DROPSEED

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11A

EXHIBIT A

AREA 4: FULL PERFORMANCE STANDARDS REQUIRED, 0.35 ACRES
BANK STABILITY MONITORING REQUIRED, 450 LF

AREA 5: FULL PERFORMANCE
STANDARDS REQUIRED, 0.28 ACRES
BANK STABILITY MONITORING REQUIRED, 700 LF

AREA 3: NO M&M REQUIRED (9/27/13)
WEST BANK RELEASED FROM
BANK STABILITY MONITORING
(8/11/15)

APPROXIMATE BIKE TRAIL

APPROXIMATE BIKE TRAIL

MATCHLINE DRAWING B-11B

MATCHLINE DRAWING B-11D

RIVER ROAD

TOWNLINE ROAD

FOREST VIEW AVE. S.

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011.
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0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

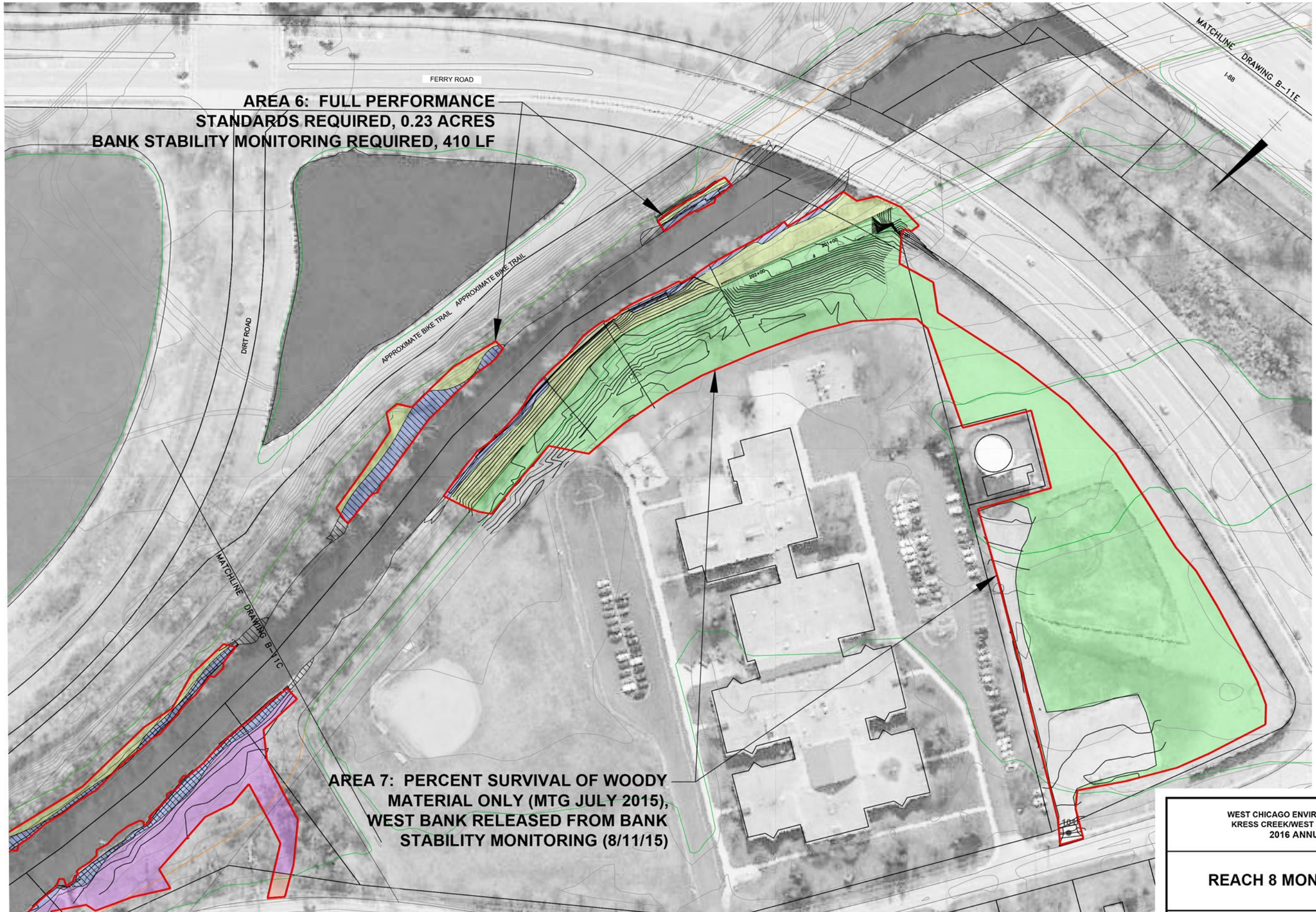
FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11C



NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN OCTOBER 2011 THROUGH OCTOBER 2012.
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0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11D

EXHIBIT A

AREA 10: NO M&M REQUIRED (9/27/13)

AREA 11: FULL PERFORMANCE STANDARDS REQUIRED, 2.86 ACRES BANK STABILITY MONITORING REQUIRED, 680 LF

AREA 9: NO M&M REQUIRED (9/27/13), BANK STABILITY MONITORING REQUIRED, 600 LF

FERRY CREEK: BANK STABILITY MONITORING REQUIRED TO CONFLUENCE WITH RIVER BOTH BANKS, 1500 LF TOTAL

AREA 12: FULL PERFORMANCE STANDARDS REQUIRED (EXCLUDES GRAVEL LOT) 8.98 ACRES (TOTAL)

MATCHLINE DRAWING B-11G

MATCHLINE DRAWING B-11I

RAYMOND DRIVE

GRAVEL PARKING LOT

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN FROM OCTOBER 2011 THROUGH OCTOBER 2012.
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0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

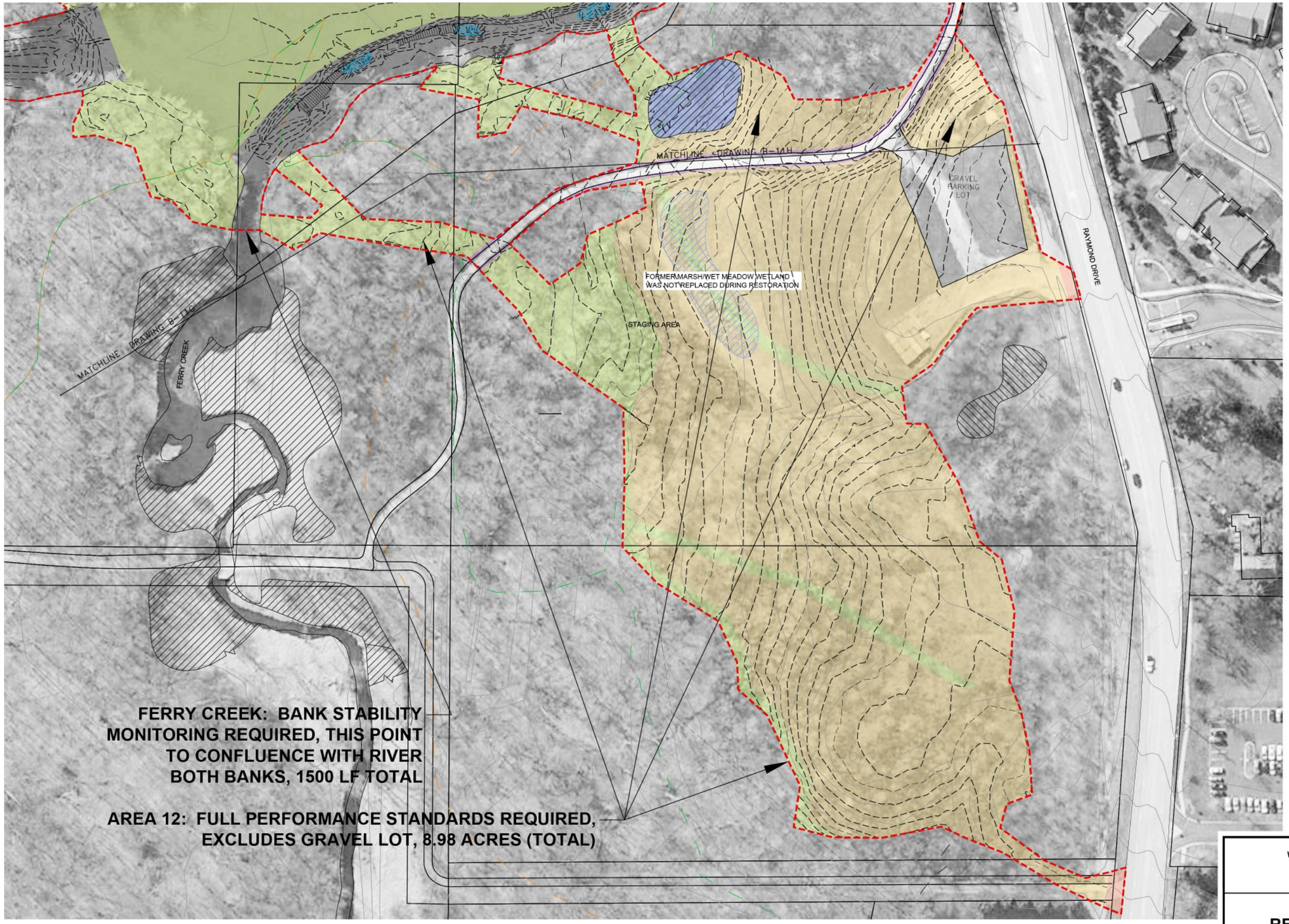
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11H

EXHIBIT A



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE–CONSTRUCTION CONTOUR
- POST–CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B–12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B–12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B–12
- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B–12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN FROM OCTOBER 2011 THROUGH OCTOBER 2012.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15–FT. FROM THE EDGE OF WATER.

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8–17–2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11I

EXHIBIT A

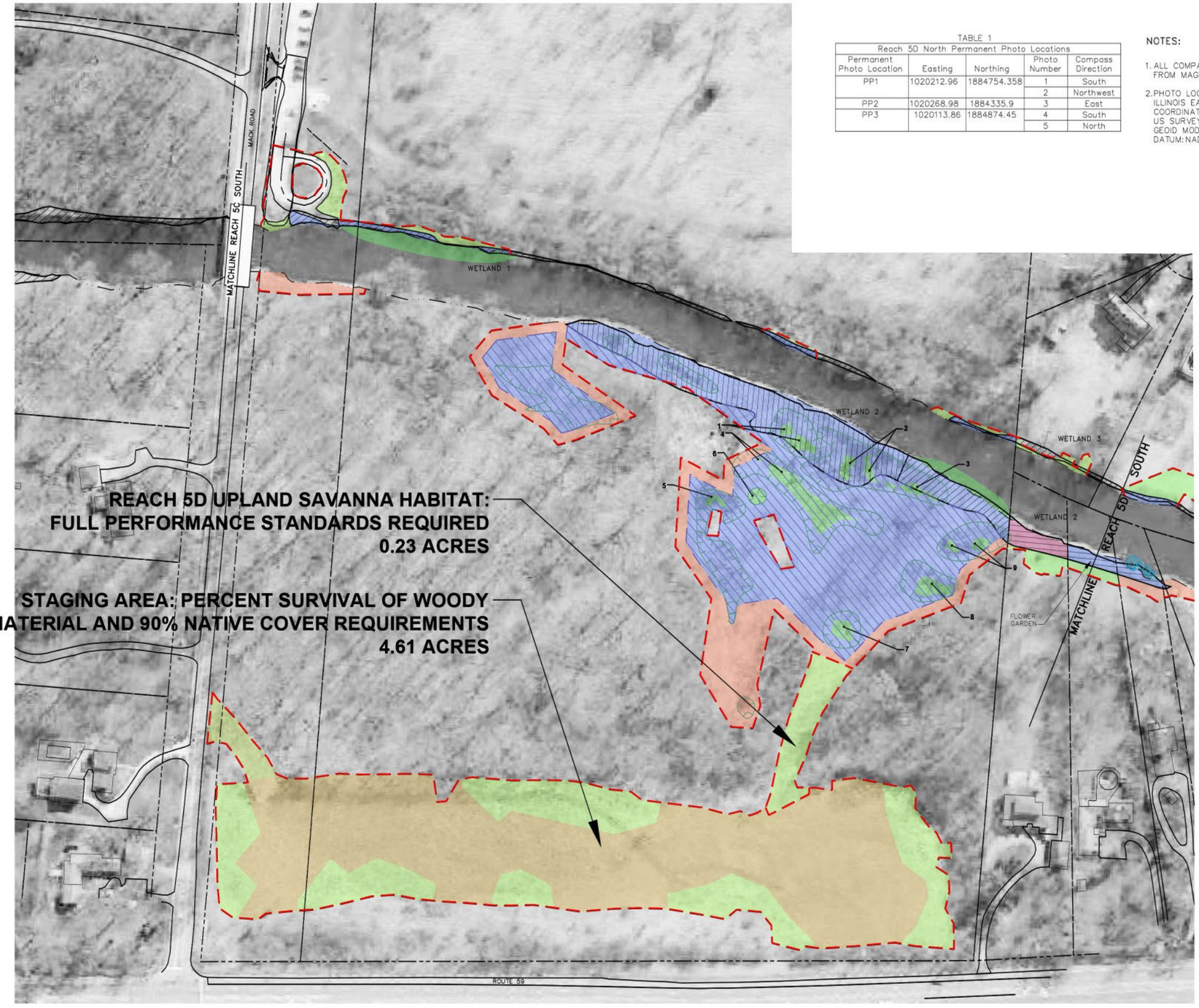


TABLE 1

Reach 5D North Permanent Photo Locations

Permanent Photo Location	Easting	Northing	Photo Number	Compass Direction
PP1	1020212.96	1884754.358	1	South
			2	Northwest
PP2	1020268.98	1884335.9	3	East
PP3	1020113.86	1884874.45	4	South
			5	North

NOTES:

1. ALL COMPASS DIRECTIONS ARE FROM MAGNETIC NORTH.
2. PHOTO LOCATIONS ARE IN THE ILLINOIS EAST STATE PLANE COORDINATE SYSTEM IN UNITS OF US SURVEY FEET. GEOID MODEL: GEOID 96 (CONUS) DATUM: NAD 83

LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- PROPERTY LINE
- APPROXIMATE EDGE OF WATER
- POOL
- RIFFLE
- 8 HOLLOW
- WETLAND BOUNDARY
- WET MEADOW WETLAND
- FORESTED WETLAND
- MITIGATION WETLAND
- RESTORED UPLAND SAVANNA
- RESTORED UPLAND SAVANNA AND FERMI LABS SEED
- RESTORED FERMI LABS SEED
- RESTORED WETLAND
- AREA RESTORED WITH PLANT PLUGS
- RESTORED SHADY FLOODPLAIN
- RESTORED LAWN
- RESTORED BENTGRASS

NOTE:

1. BASE MAP PROVIDED BY KERR-McGEE CHEMICAL LLC (NOW KNOWN AS TRONOX) IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK. TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINES WERE DEVELOPED BY ARCADIS FROM SURVEY DATA COLLECTED BY PROSOURCE TECHNOLOGIES, INC. (NOW KNOWN AS CARLSON PSI) FOLLOWING COMPLETION OF RESTORATION.

0 80' 160'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING B-12C, TRACER NO. B0071024/0000/00035/REACH5D/71024G15.DWG, DATED 3/27/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

MACK ROAD MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE 12-6

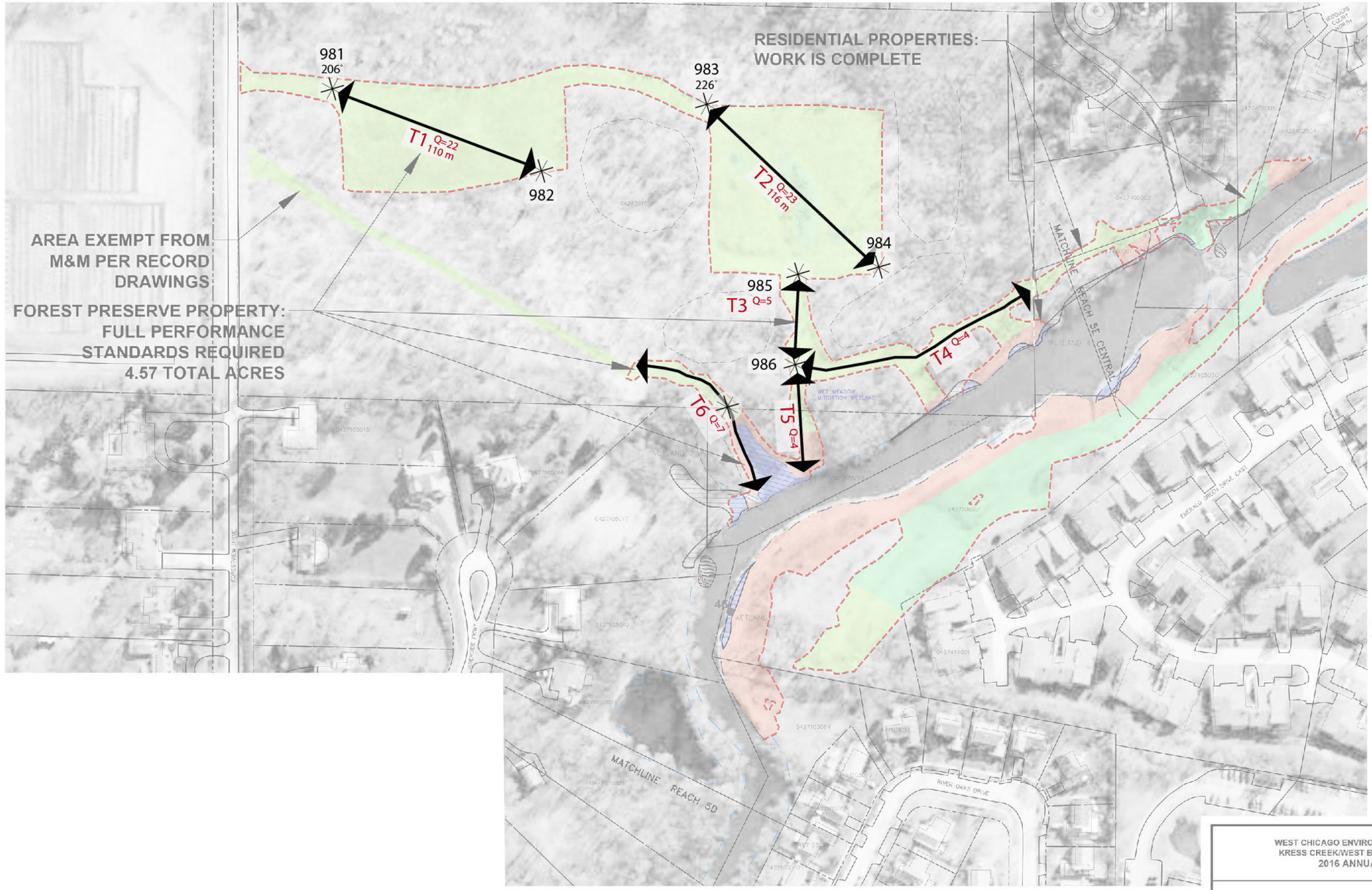
EXHIBIT A

2016 Annual Monitoring Report

Reaches 8A, 8B, 5D and
the Mack Road Staging Area,
of the Kress Creek /
West Branch DuPage River Site

EXHIBIT B

Transect & Quadrat Locations



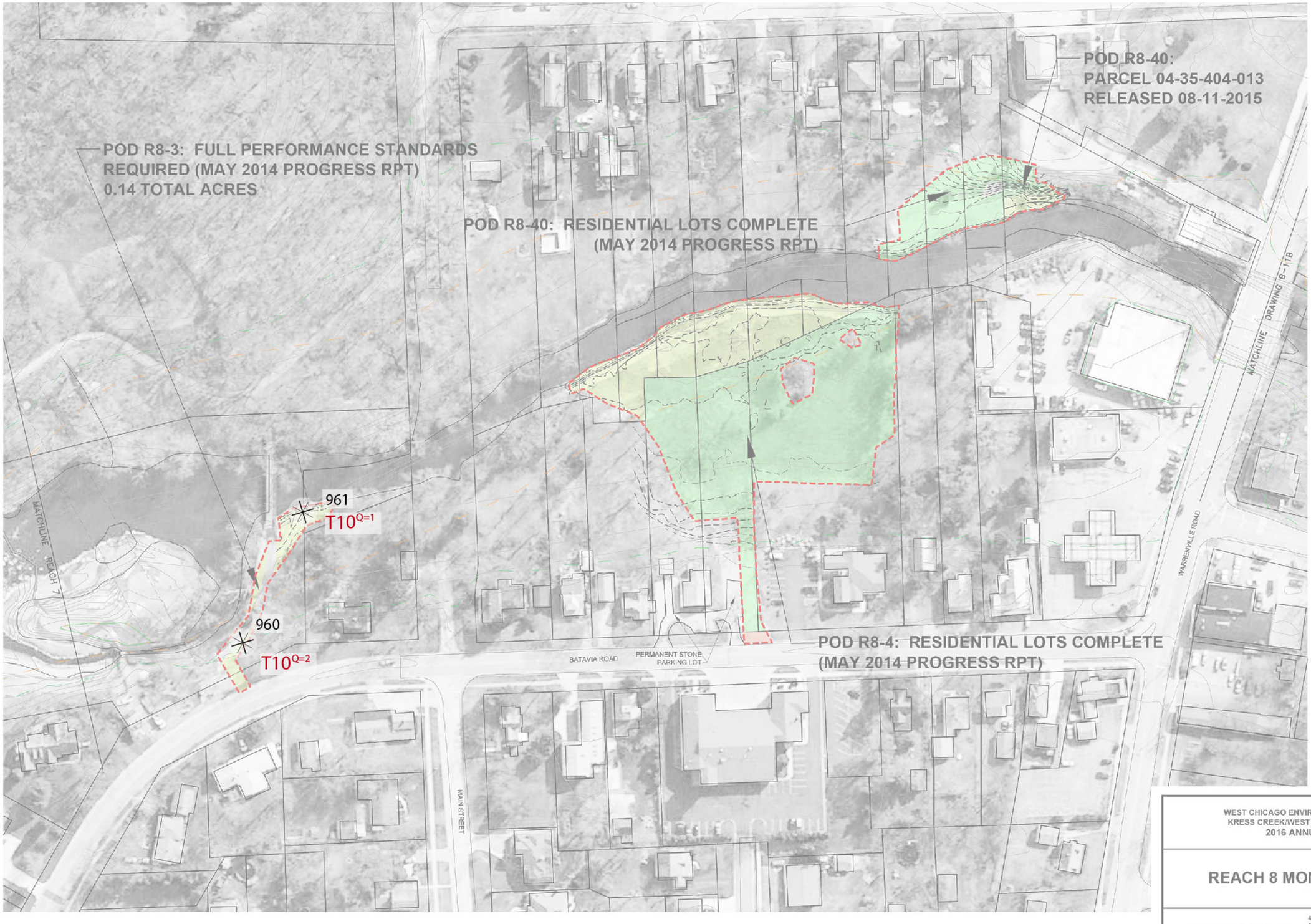
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 5E MONITORING STATUS

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING R-12A, TRACER NO. B0071030/0000/00026/DWG/713.50G10.DWG, DATED 5/21/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE 12-1



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH LAWN SEED PER TABLE 7 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH PRAIRIE DROPSEED
- SURVEY POINT
- TRANSECT
- Q QUADRAT

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11A

EXHIBIT B

AREA 4: FULL PERFORMANCE STANDARDS REQUIRED, 0.35 ACRES
BANK STABILITY MONITORING REQUIRED, 450 LF

AREA 5: FULL PERFORMANCE
STANDARDS REQUIRED, 0.28 ACRES
BANK STABILITY MONITORING REQUIRED, 700 LF

AREA 3: NO M&M REQUIRED (9/27/13)
WEST BANK RELEASED FROM
BANK STABILITY MONITORING
(8/11/15)

974
975
976
977
978

T11 Q=1
T12 Q=7 67 m
T13 Q=6 60 m

RIVER ROAD
TOWNLINE ROAD
FOREST VIEW AVE. S.
MATCHLINE DRAWING B-11B
MATCHLINE DRAWING B-11D

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
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- LIMIT OF ACTUAL DISTURBANCE
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
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- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:

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SURVEY POINT
TRANSECT
Q QUADRAT

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

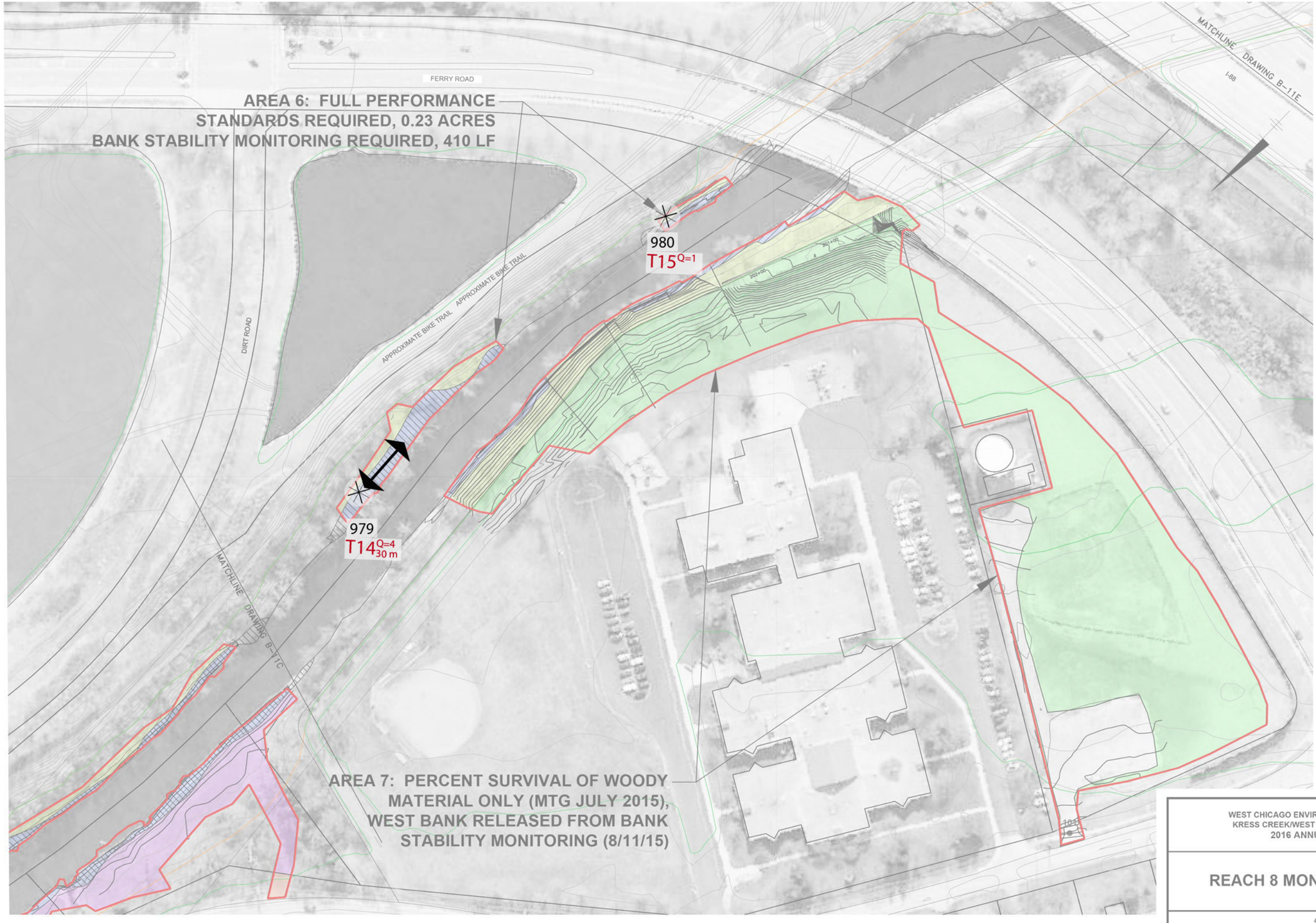
FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11C



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH LAWN SEED MIX PER TABLE 7 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN OCTOBER 2011 THROUGH OCTOBER 2012.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

SURVEY POINT

TRANSECT

Q QUADRAT

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11D

AREA 10: NO M&M REQUIRED (9/27/13)

AREA 11: FULL PERFORMANCE STANDARDS REQUIRED, 2.86 ACRES BANK STABILITY MONITORING REQUIRED, 680 LF

AREA 9: NO M&M REQUIRED (9/27/13), BANK STABILITY MONITORING REQUIRED, 600 LF

944

943

T2 Q=5 22 m

942

T1 Q=11 214 m

MATCHLINE DRAWING B-11G

RAYMOND DRIVE

MATCHLINE DRAWING B-11I

GRAVEL PARKING LOT

FERRY CREEK: BANK STABILITY MONITORING REQUIRED TO CONFLUENCE WITH RIVER BOTH BANKS, 1500 LF TOTAL

AREA 12: FULL PERFORMANCE STANDARDS REQUIRED (EXCLUDES GRAVEL LOT) 8.98 ACRES (TOTAL)

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

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- SURVEY POINT
- TRANSECT
- Q QUADRAT

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
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MADISON, WI 53703
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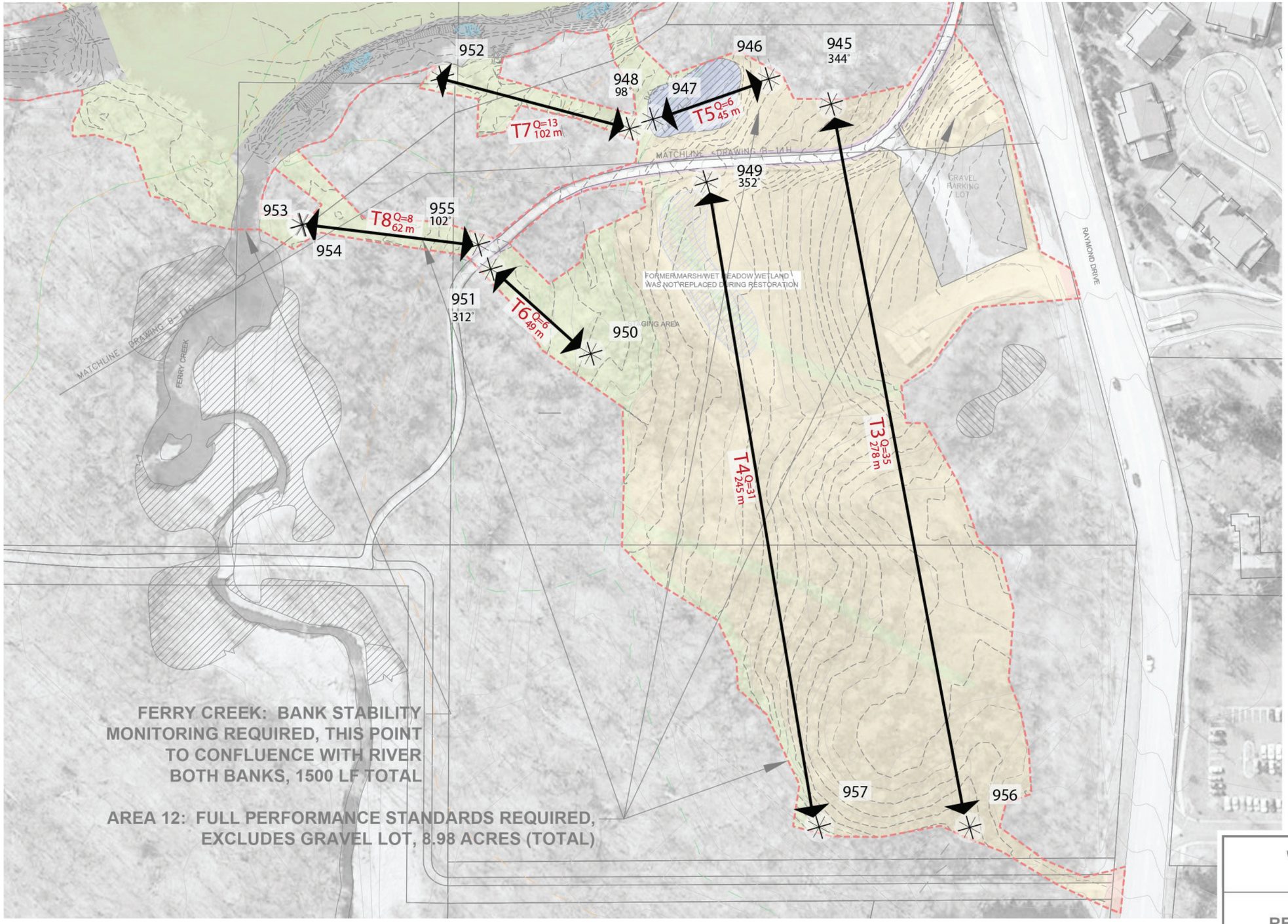
FIGURE B-11H



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
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- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-12

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- SURVEY POINT
- TRANSECT
- Q QUADRAT

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

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MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11I

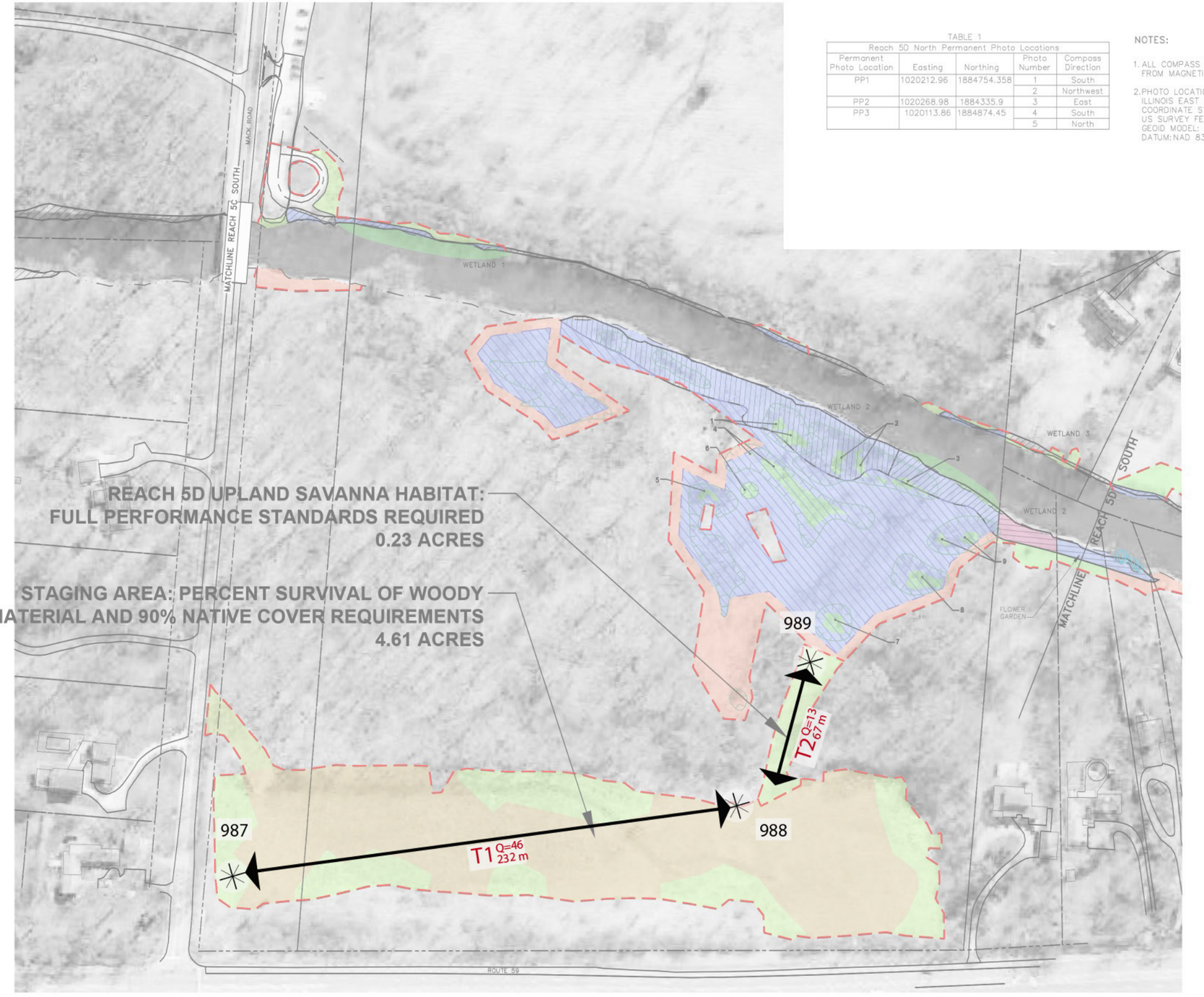

TABLE 1
Reach 5D North Permanent Photo Locations

Permanent Photo Location	Easting	Northing	Photo Number	Compass Direction
PP1	1020212.96	1884754.358	1	South
			2	Northwest
PP2	1020268.98	1884335.9	3	East
PP3	1020113.86	1884874.45	4	South
			5	North

NOTES:

1. ALL COMPASS DIRECTIONS ARE FROM MAGNETIC NORTH.
2. PHOTO LOCATIONS ARE IN THE ILLINOIS EAST STATE PLANE COORDINATE SYSTEM IN UNITS OF US SURVEY FEET. GEOID MODEL: GEOID 96 (CONUS) DATUM: NAD 83

LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- PROPERTY LINE
- APPROXIMATE EDGE OF WATER
- POOL
- RIFFLE
- 8 HOLLOW
- WETLAND BOUNDARY
- WET MEADOW WETLAND
- FORESTED WETLAND
- MITIGATION WETLAND
- RESTORED UPLAND SAVANNA
- RESTORED UPLAND SAVANNA AND FERMI LABS SEED
- RESTORED FERMI LABS SEED
- RESTORED WETLAND
- AREA RESTORED WITH PLANT PLUGS
- RESTORED SHADY FLOODPLAIN
- RESTORED LAWN
- RESTORED BENTGRASS

- SURVEY POINT
- TRANSECT
- Q QUADRAT

NOTE:

1. BASE MAP PROVIDED BY KERR-McGEE CHEMICAL LLC (NOW KNOWN AS TRONOX) IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK. TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINES WERE DEVELOPED BY ARCADIS FROM SURVEY DATA COLLECTED BY PROSOURCE TECHNOLOGIES, INC. (NOW KNOWN AS CARLSON PSI) FOLLOWING COMPLETION OF RESTORATION.

0 80' 160'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING B-12C, TRACER NO. B0071024/0000/00035/REACH5D/71024G15.DWG, DATED 3/27/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

MACK ROAD MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE 12-6

2016 Annual Monitoring Report

Reach 8, and
the Mack Road Staging Area,
of the Kress Creek /
West Branch DuPage River Site

Exhibit C

Tree and Shrub
Survival Diagrams

AT - (1) Dead 2015

CS
1 Missing 2015

SC - All Dead
(2) 2015
(1) 2016

CS - (2) Dead 2015

SC - All Dead 2015

SN - beaver damage,
still alive

AF - All Dead
(1) 2015
(2) 2016

SD - All Missing 2015

COC - (1) Mising 2015

BN - (1) Dead 2015

CS - (1) Missing 2015

Beaver Damage,
Regrowing from Root

CM - (2) Dead 2015

SC - (2) Dead 2015

All AF Missing
Under Downed
Tree, 2016

Relocated 2015

CM - (1) Dead 2016

MATCHLINE DRAWING B-11I

LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- QM TREE REMOVED FROM MONITORING - 2015
- PA SHRUB REMOVED FROM MONITORING - 2015
- ACCEPTABLE CONDITION
- PLANT DEAD
- ORIGINAL PLANT DEAD, REGROWING FROM ROOT
- TREE LEADER DEAD, LOWER PORTION ALIVE
- PLANT MISSING WITHIN ORIGINAL STAKES OR CANNOT BE LOCATED
- MONITORING NOT REQUIRED

NOTE:

1. TREE AND SHRUB FIELD ASSESSMENT PERFORMED BY SMITHGROUPJJR ON SEPTEMBER 12-13, 2016.

0 40' 80'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8
2016 TREE AND SHRUB MONITORING

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11H T

MATCHLINE DRAWING B-11H

RAYMOND DRIVE

GRAVEL PARKING LOT

STAGING AREA

VP
(1) Missing 2016

CA
(1) Dead 2015

XA
(1) Dead 2016

CA - (1) Dead 2015

CS - (1) Dead 2016

RS - (1) Dead 2016

CS - (2) Dead 2016

XA
(1) Dead 2015
(1) Dead 2016

CCG
(1) Dead 2015
(1) Dead 2016

PA
(1) Missing 2015

(2) Dead 2015

PT

Alive but stressed

COC - (1) Dead 2015

CCG - (2) Dead 2015

CA - (1) Dead 2016

PA - (1) Dead 2015

XA - (3) Dead 2016

VP - (1) Dead 2015

CCG - (1) Dead 2016

PA - (1) Missing 2016

CCG - (1) Missing 2015

PA - (1) Dead 2015

XA - All Dead 2016

XA
(1) Missing 2016

PA
(1) Missing 2015

CCG
(1) Dead 2015

CA
(1) Dead 2015

RS - (1) Dead 2016

XA - (2) All Dead 2016

RS - (1) Dead 2016

PT
(1) Dead 2015

PA
(2) Dead 2015

Extra CA,
noted 2016

XA - (1) Dead 2016

LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- QM TREE REMOVED FROM MONITORING - 2015
- PA SHRUB REMOVED FROM MONITORING - 2015
- ACCEPTABLE CONDITION
- PLANT DEAD
- ORIGINAL PLANT DEAD, REGROWING FROM ROOT
- TREE LEADER DEAD, LOWER PORTION ALIVE
- PLANT MISSING WITHIN ORIGINAL STAKES OR CANNOT BE LOCATED

NOTE:

1. TREE AND SHRUB FIELD ASSESSMENT PERFORMED BY SMITHGROUPJJR ON SEPTEMBER 12-13, 2016.

0 40' 80'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8
2016 TREE AND SHRUB MONITORING

SMITHGROUPJJR
44 EAST MIFFLIN STREET
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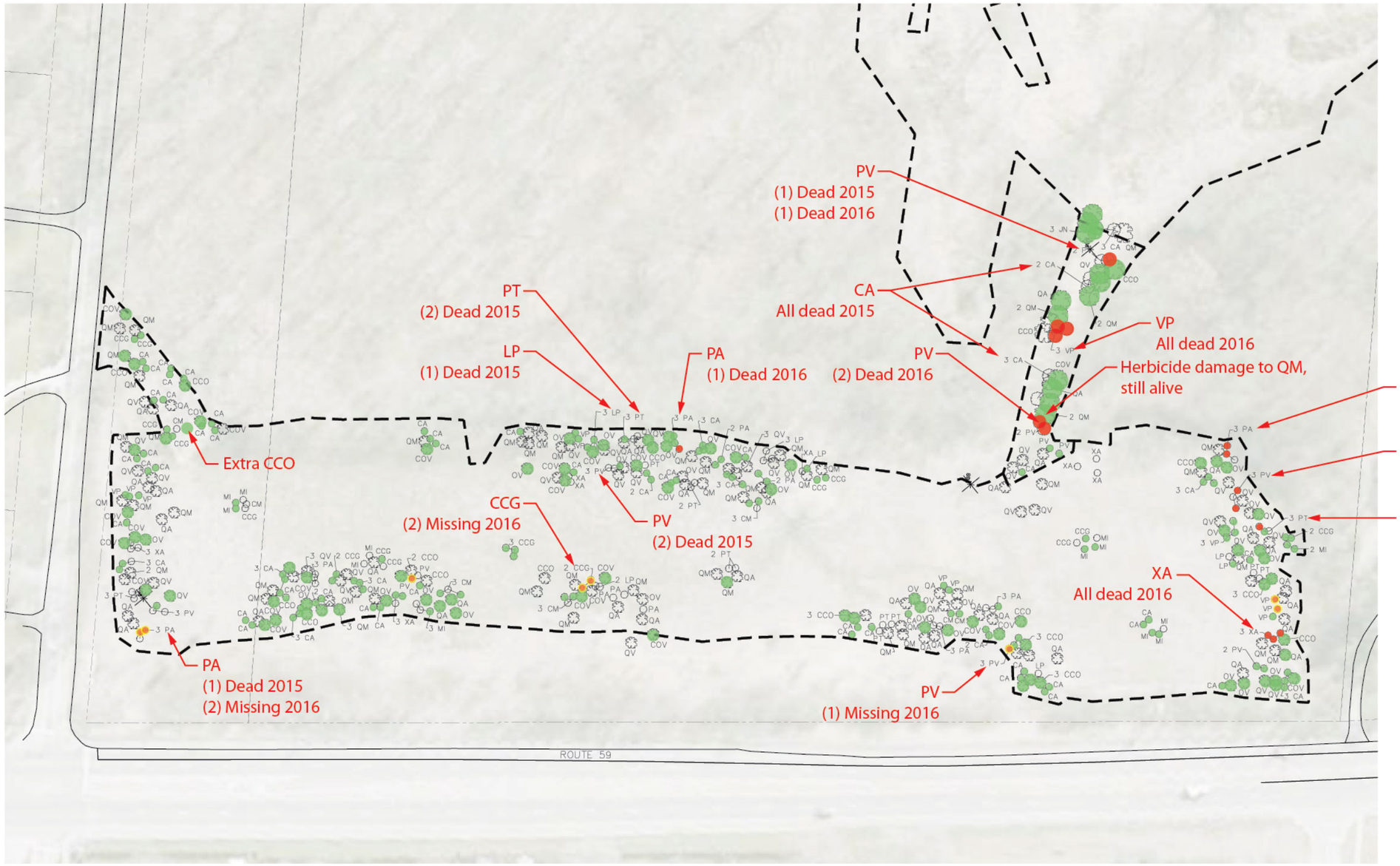
FIGURE
B-11I T



LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- PROPERTY LINE
- QM — TREE REMOVED FROM MONITORING 2015
- PA — SHRUB REMOVED FROM MONITORING 2015
- ACCEPTABLE CONDITION
- PLANT DEAD
- ORIGINAL PLANT DEAD, REGROWING FROM ROOT
- TREE LEADER DEAD, LOWER PORTION ALIVE
- PLANT MISSING WITHIN ORIGINAL STAKES OR CANNOT BE LOCATED

NOTE:

1. TREE AND SHRUB FIELD ASSESSMENT PERFORMED BY SMITHGROUPJJR ON SEPTEMBER 12-13, 2016.

0 50' 100'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING B-12C, TRACER NO. B0071024/0000/00035/REACH5D/71024G15.DWG, DATED 3/27/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

MACK ROAD STAGING AREA
2016 TREE AND SHRUB MONITORING

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
12-6 T

EXHIBIT C

2016 Annual Monitoring Report

Reach 8, and
the Mack Road Staging Area,
of the Kress Creek /
West Branch DuPage River Site

APPENDIX A

Maintenance and
Management
Field Reports

APPLIED ECOLOGICAL SERVICES
SPECIALISTS IN ECOLOGICAL SCIENCE, RESTORATION, MANAGEMENT, AND RESEARCH
17921 W SMITH ROAD • PO BOX 256 • BRODHEAD, WI 53520 • (608) 897-8641

WCERT Kress Creek Vegetation Management Oversight Report

2016 Report No.	1
Prepared by:	Mark O'Leary
Date of Site Visit:	04.27.16
Observers:	Mark O'Leary and Cecily Cunz
Weather:	Cloudy, some rain, 45 degrees

Observations and Comments

1. Prescribed Burn. Staff spot-checked the results of prescribed burns at Reach 8 Pod R8-3, and R8 Areas 5, 6, 11 and 12. We observed evidence of decent burns at all locations.
2. Tree Stakes. Staff spot-checked reaches 3-6 to assess whether tree stakes had been removed. We observed no stakes.
3. Stream Restoration. Staff visited bank erosion areas 1 and 2 on Ferry Creek per the 2016 Annual Report. Water levels were well below bankfull elevations which made it easier to observe and photograph bank conditions.
    a. We recommend that WCERT shoot topography in the vicinity of these two areas while water levels are low to inform restoration designs.
    b. We also observed evidence of muskrat damage along the bank between bank erosion areas 1 and 2. We recommend that WCERT employ a trapper to eradicate the muskrats.
4. Weeds. Burdock, reed canary grass and basal florets of garlic mustard are ready for herbicide treatment.

Representative photos and photo points are attached.

Please call or email with questions or comments.

Representative Photos

P1. R8-A11-12 burn.

P2. R8-A11-12 burn.

P3. Bank erosion Area 1 on Ferry Creek.

P4. Bank erosion Area 1 on Ferry Creek.

P5. Island at McDowell Grove.

P6. New tree plantings.

P7. R8 burn.

P8. Looking downstream at bank erosion Area 1 on Ferry Creek.

P9. Looking upstream at bank erosion Area 1 on Ferry Creek.

P10. Muskrat damage along Ferry Creek between erosion areas 1 and 2.

P11. Looking upstream at left bank at erosion area 2 along Ferry Creek.

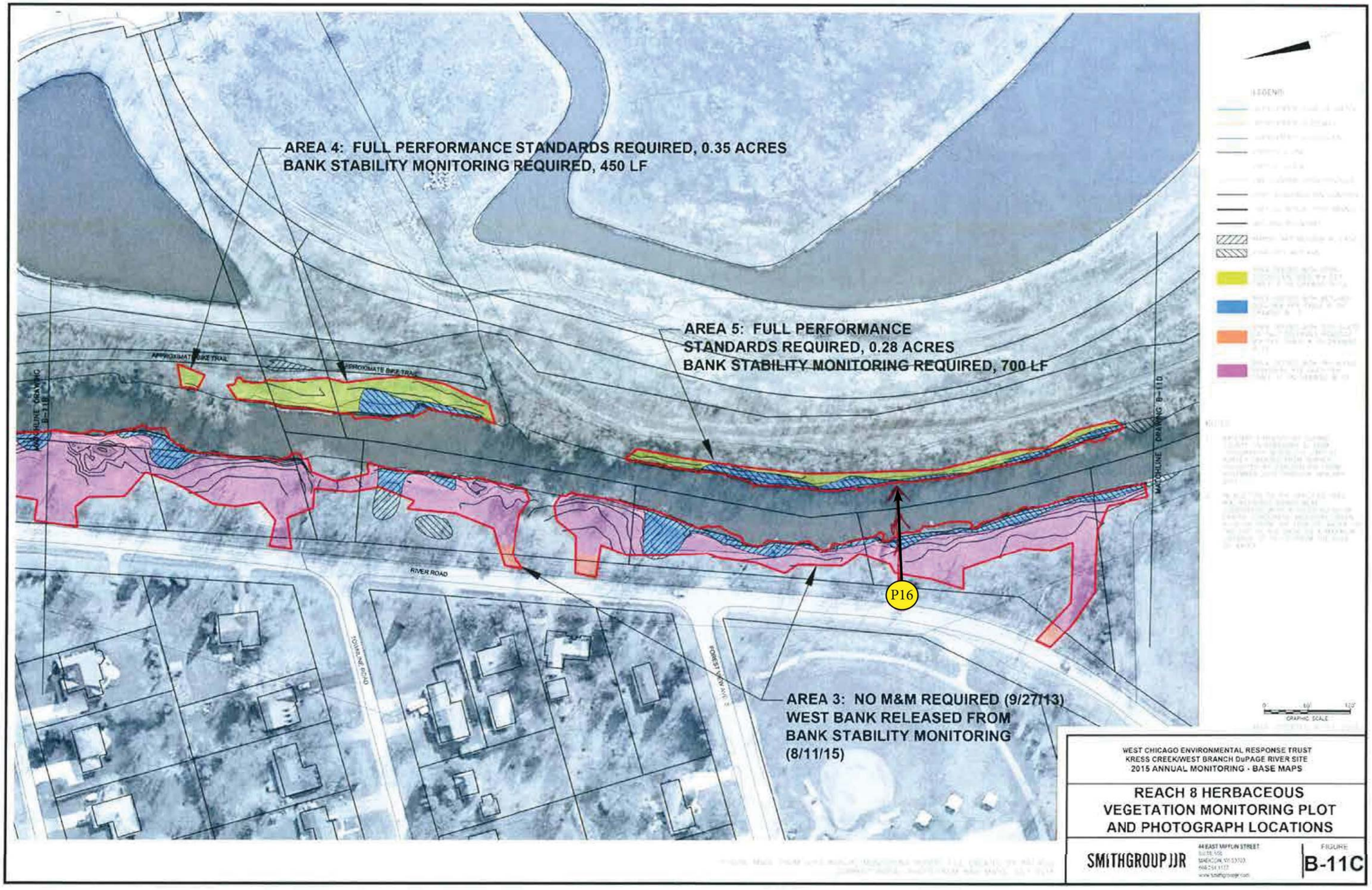
P12. Looking downstream at left bank at erosion area 2 along Ferry Creek.

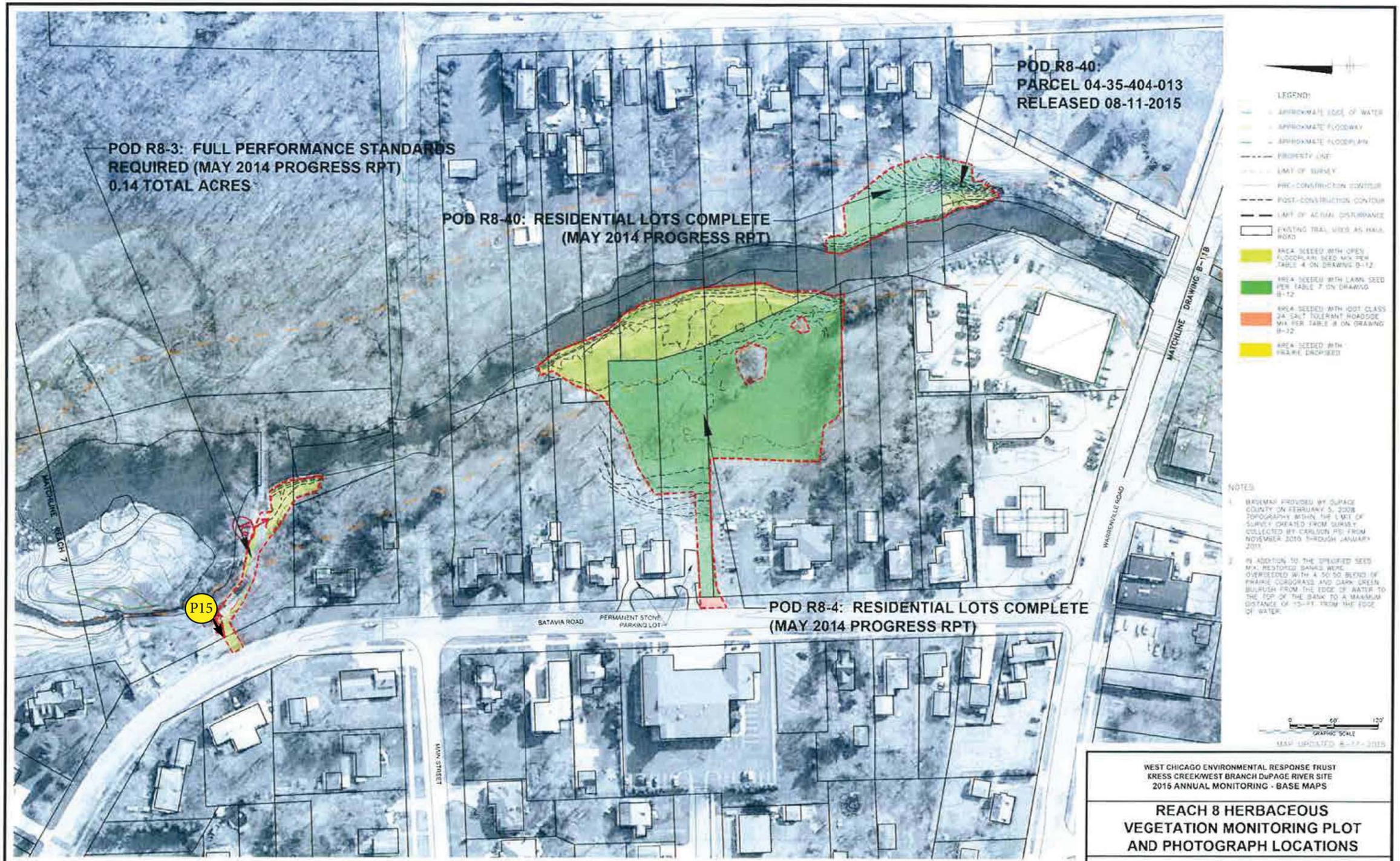
P13. Looking downstream at right bank at erosion area 2 along Ferry Creek.

P14. R8 Area 12 burn.

P15. R8 Pod 3. Burned. Evidence of garlic mustard, reed canary grass and burdock.

P16. R8 Pod 3. Burned. Evidence of garlic mustard, reed canary grass and burdock.


AREA 4: FULL PERFORMANCE STANDARDS REQUIRED, 0.35 ACRES
BANK STABILITY MONITORING REQUIRED, 450 LF
AREA 5: FULL PERFORMANCE
STANDARDS REQUIRED, 0.28 ACRES
BANK STABILITY MONITORING REQUIRED, 700 LF
AREA 3: NO M&M REQUIRED (9/27/13)
WEST BANK RELEASED FROM
BANK STABILITY MONITORING
(8/11/15)
P16
RIVER ROAD
TOURAINE ROAD
FOREST VIEW AVE
APPROXIMATE BIKE TRAIL
APPROXIMATE BIKE TRAIL
MATCHLINE DRAWING B-11B
MATCHLINE DRAWING B-11D
LEGEND
NOTES
GRAPHIC SCALE
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2015 ANNUAL MONITORING - BASE MAPS
REACH 8 HERBACEOUS
VEGETATION MONITORING PLOT
AND PHOTOGRAPH LOCATIONS
SMITHGROUPJJR
44 EAST MIFFLIN STREET
FIGURE
B-11C


POD R8-3: FULL PERFORMANCE STANDARDS
REQUIRED (MAY 2014 PROGRESS RPT)
0.14 TOTAL ACRES
POD R8-40: RESIDENTIAL LOTS COMPLETE
(MAY 2014 PROGRESS RPT)
POD R8-40:
PARCEL 04-35-404-013
RELEASED 08-11-2015
POD R8-4: RESIDENTIAL LOTS COMPLETE
(MAY 2014 PROGRESS RPT)
P15
MATCHLINE REACH 7
MATCHLINE DRAWING B-11B
BATAVIA ROAD
PERMANENT STONE PARKING LOT
MAIN STREET
WARRENVILLE ROAD
LEGEND:
AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
AREA SEEDED WITH LAWN SEED PER TABLE 7 ON DRAWING B-12
AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
AREA SEEDED WITH PRAIRIE DROPSEED
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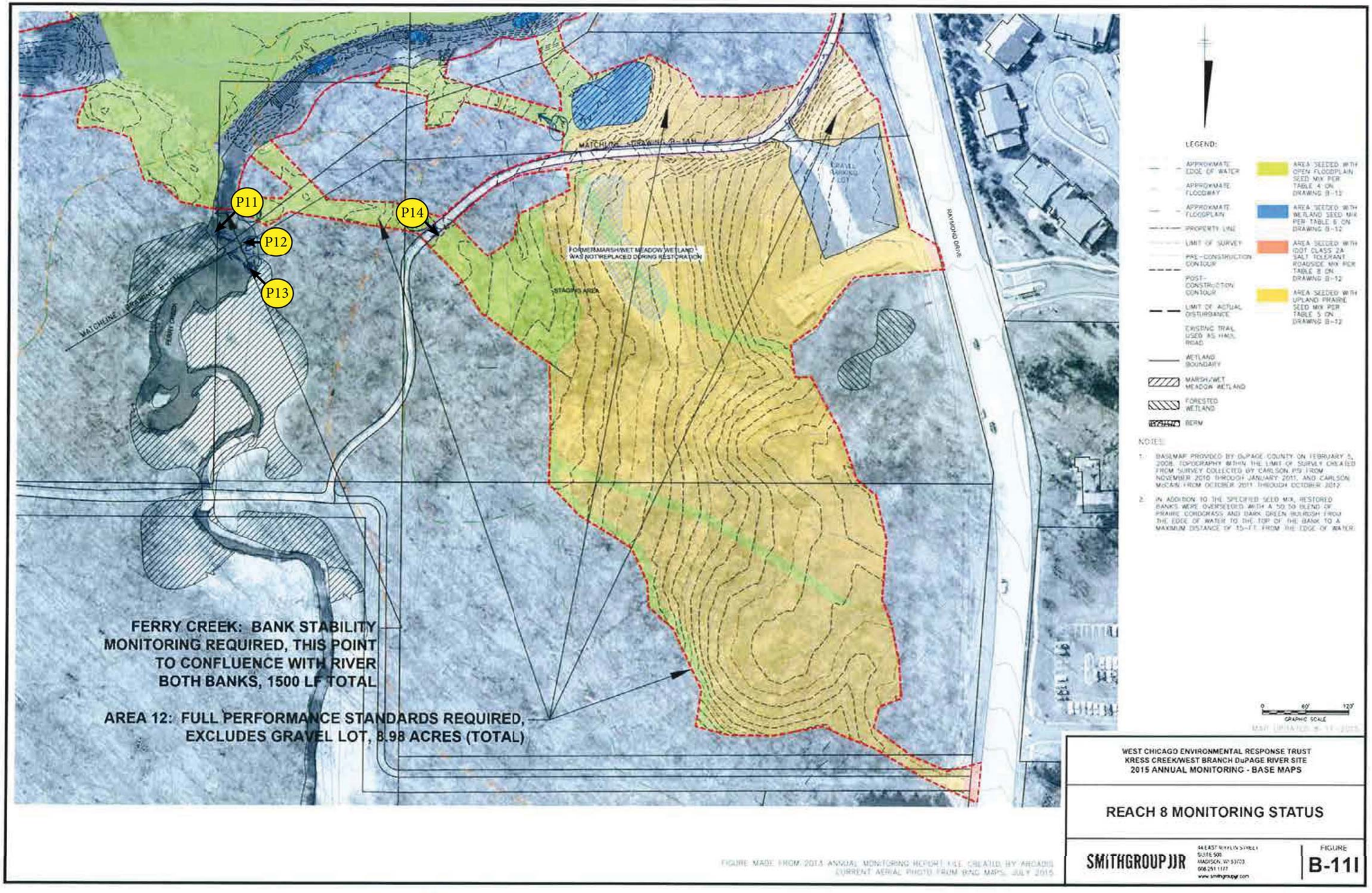
0 60' 120'
GRAPHIC SCALE
MAP UPDATED: 8-17-2015
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2015 ANNUAL MONITORING - BASE MAPS
REACH 8 HERBACEOUS VEGETATION MONITORING PLOT AND PHOTOGRAPH LOCATIONS
SMITHGROUPJJR
FIGURE
B-11A
FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS
CURRENT AERIAL PHOTO FROM RNG MAPS, JULY 2015


P11
P12
P13
P14
MATCHLINE - SEE DRAWING B-11H
MATCHLINE - SEE DRAWING B-11I
FERRY CREEK
FORMER MARSH/WET MEADOW WETLAND WAS NOT REPLACED DURING RESTORATION
STAGING AREA
GRAVEL PARKING LOT
RAYMOND DRIVE
FERRY CREEK: BANK STABILITY MONITORING REQUIRED, THIS POINT TO CONFLUENCE WITH RIVER BOTH BANKS, 1500 LF TOTAL
AREA 12: FULL PERFORMANCE STANDARDS REQUIRED, EXCLUDES GRAVEL LOT, 8.98 ACRES (TOTAL)
LEGEND:
APPROXIMATE EDGE OF WATER
APPROXIMATE FLOODWAY
APPROXIMATE FLOODPLAIN
PROPERTY LINE
LIMIT OF SURVEY
PRE-CONSTRUCTION CONTOUR
POST-CONSTRUCTION CONTOUR
LIMIT OF ACTUAL DISTURBANCE
EXISTING TRAIL USED AS HAUL ROAD
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0 60' 120'
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KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2015 ANNUAL MONITORING - BASE MAPS
REACH 8 MONITORING STATUS
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FIGURE
B-11I
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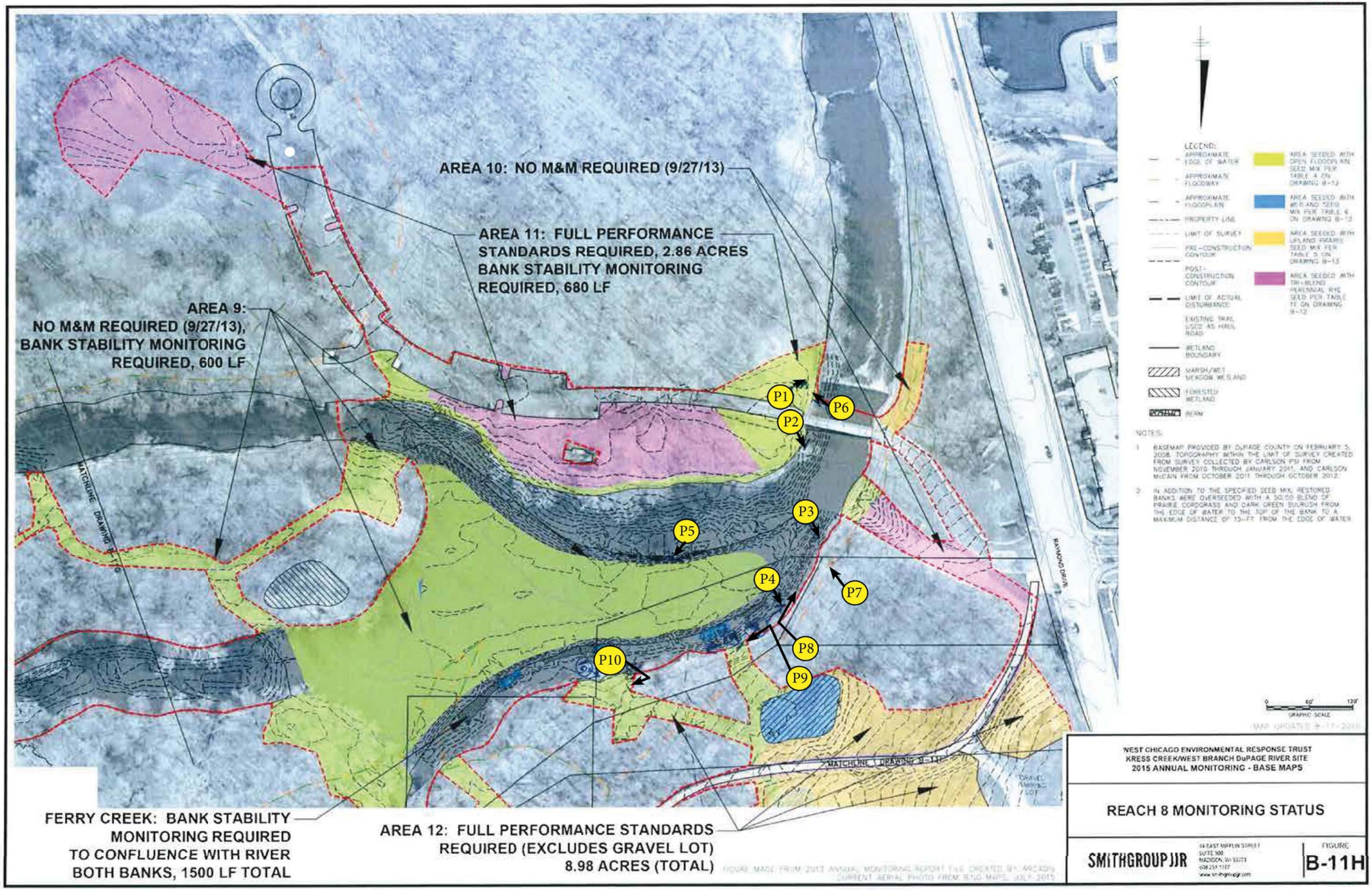
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015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BANK STABILITY MONITORING REQUIRED, 680 LF
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NO M&M REQUIRED (9/27/13),
BANK STABILITY MONITORING REQUIRED, 600 LF
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
MATCHLINE DRAWING B-11G
MATCHLINE DRAWING B-11I
RAYMOND DRIVE
FERRY CREEK: BANK STABILITY MONITORING REQUIRED TO CONFLUENCE WITH RIVER BOTH BANKS, 1500 LF TOTAL
AREA 12: FULL PERFORMANCE STANDARDS REQUIRED (EXCLUDES GRAVEL LOT)
8.98 ACRES (TOTAL)
LEGEND:
APPROXIMATE EDGE OF WATER
APPROXIMATE FLOODWAY
APPROXIMATE FLOODPLAIN
PROPERTY LINE
LIMIT OF SURVEY
PRE-CONSTRUCTION CONTOUR
POST-CONSTRUCTION CONTOUR
LIMIT OF ACTUAL DISTURBANCE
EXISTING TRAIL USED AS HAUL ROAD
WETLAND BOUNDARY
MARSH/WET MEADOW WETLAND
FORESTED WETLAND
RIPRAP
AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-13
AREA SEEDED WITH WET AND SEDGE MIX PER TABLE 6 ON DRAWING B-13
AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-13
AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12
NOTES:
1 BASEMAP PROVIDED BY DUPAGE COUNTY ON FEBRUARY 3, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN FROM OCTOBER 2011 THROUGH OCTOBER 2012.
2 IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT FROM THE EDGE OF WATER
0 60' 120'
GRAPHIC SCALE
MAP UPDATED 9-17-2015
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2015 ANNUAL MONITORING - BASE MAPS
REACH 8 MONITORING STATUS
SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608 251 1177
www.smithgroupjjr.com
FIGURE
B-11H

From: Mike Polito [Mike.Polito@tallgrassrestoration.com]
Sent: Tuesday, May 31, 2016 7:59 AM
To: William W. Stoll
Cc: Mark J. O'Leary; Cecily M. Cunz
Subject: RE: WCERT management bullet points

I agree that we're in line with each other's notes. We're trying to get our first weed control pass out the door this week (or at least started this week); weather will determine just how the next few days play out and what (if anything) gets delayed. There is overseeding scheduled for Reach 8, areas 5, 6 and 12 this spring, so that will help bolster things there down the road.

I will keep you in the loop when things officially hit the schedule, but if there's anything else in the meantime, please let me know!

Mike

From: William W. Stoll [mailto:bill@appliedeco.com]
Sent: Friday, May 27, 2016 12:01 PM
To: Mike Polito
Cc: Mark J. O'Leary; Cecily M. Cunz
Subject: RE: WCERT management bullet points

Mike – Your notes are consistent with mine. See my comments below in red. One general comment – I would do your herbicide application in any areas you plan to seed this spring ASAP, so you don't seed too late. This is not as urgent in areas you plan to seed in the fall.

Thanks,
Bill

From: Mike Polito [mailto:Mike.Polito@tallgrassrestoration.com]
Sent: Thursday, May 26, 2016 9:44 AM
To: William W. Stoll
Subject: WCERT management bullet points

Hello Bill,

Sorry, didn't get to this yesterday. Below is the brief weed inventory/to-do list based on the contract and what we saw out there.

Reach 5D/Mack Road staging area: scheduled for seeding this spring, would benefit from a pre-seeding spraying for weeds (TBD)

Reach 5E: targeted for sprayout, hopefully will be treated once early season, again later in the season. Certain small sections of good vegetation will be excluded if possible by the applicator. Then it will be followed up by prescribed burning and seeding in the fall, with 3 years of stewardship following it. This applies to the Upland Savanna areas, but you were considering only spot spraying some of the wetland and shady floodplain areas before re-seeding.

Reach 8, Pod R8-3: has Garlic Mustard and Reed Canary Grass infestations. TGR will hand pull and remove the standing Garlic Mustard, and treat the Reed Canary Grass with spot-sprayed Aquaneat herbicide to get it under control. Note: GM going to seed – so will need to pull ASAP.

Reach 8, Area 4: targeted for sprayout, hopefully will be treated once early season, again later in the season. Then it will be followed up by prescribed burning and seeding in the fall, with 3 years of stewardship following it.

Reach 8, Area 5: has sporadic Reed Canary Grass, Purple Loosestrife, and Buckthorn sprouts scattered throughout. TGR will spot spray these species with Aquaneat or Element 3a. Any over-seeding here (in killed off areas)?

Reach 8, Area 6: has heavy Reed Canary Grass infestation along the southern border, with sporadic Reed Canary Grass, Purple Loosestrife, and Cattail growth in other parts. Heavy Aquaneat spraying will be used to control Reed Canary monocultures, while targeted spot spraying of Aquaneat or Element 3a will be used to control other invasives. Any over-seeding here (in killed off areas)?

Reach 8, Area 11: has scattered Reed Canary Grass and Thistle. TGR will spot spray with Aquaneat and Element 3a to keep the weeds in check.

Reach 8, Area 12: has several areas of heavy Red and Sweet Clover infestation, with scattered Thistles and Crown Vetch mingled in. There are also patches of young Cottonwood trees growing in certain areas, with minor patches of Cattails and limited Phragmites survivors. TGR will use an ATV-mounted spot sprayer to take care of the site's broadleaved herbaceous plants, hitting them with Element 3a. The site will be mowed during the growing season, which will knock down the Cottonwoods and make them easier to spot spray in follow-up herbicide visits. The Cattails and Phragmites will be hand-wicked with Aquaneat to limit herbicide overspray. Over-seed this spring?

Let me know if that lines up with your notes/recollection, or if there's any gaps/omissions. Thanks for checking things out with me, we should definitely do it again after we've made our first moves out there this spring/summer.

Mike

Mike Polito
Tallgrass Restoration, LLC
2221 Hammond Drive
Schaumburg, IL 60173
P – (847) 925-9830
C – (847) 847-9958
F – (847) 925-9840

Mike.Polito@tallgrassrestoration.com
www.tallgrassrestoration.com

SMITHGROUPJJR

FIELD OBSERVATION REPORT

Project name: Kress Creek / West Branch DuPage River Site
West Chicago Environmental Response Trust (WCERT)

Project number: 20752.002

Locations: 11 am Reach 8a: Bower Elementary School
1 pm Reach 7: Island Planting Areas

Date: May 17, 2016

Issue date: May 19, 2016

Participants: Jessie Fink, SmithGroupJJR
Bower Elem: Colin Wilkie, School District Facilities Representative
Reach 7: Nick Fuller, Forest Preserve District of DuPage County
Jessi DeMartini, Forest Preserve District of DuPage County
Mike Polito, Tallgrass Restoration

Weather: Sunny, temperature in mid 60's

Distribution to Participants and Agencies:
Mike Polito, Tallgrass Restoration
Jamie Lock / Jenna Fahey, Local Communities (For School District and FPDDC)
Deepak Bhojwani, WCERT
David Seely, US EPA
Mark O'Leary / Cecily Cunz, Applied Ecological Services

Notes:

Replacement trees and shrubs were installed at Bower Elementary School on Saturday May 14. Jessie Fink met with Colin Wilkie at 11 am on May 17 to review the site. Mr. Wilkie stated that the school was generally very pleased with the plant materials and the professional installation. The following punchlist items require correction by Tallgrass Restoration, which are also shown on the attached diagram:

1. Three maple trees still have twine from transport in the tree canopy. This twine needs to be removed.
2. The third tree along the left side of the parking lot entrance drive has a slight lean to it. The school requests that Tallgrass Restoration attempt to straighten it.
3. The trunk of the first tree along the left side of the parking lot entrance drive was scuffed during installation. This type of damage typically heals itself over time. The tree will be watched during the warranty period to verify that the tree is healing.

Per email received on May 16 from the Local Communities, Tallgrass Restoration will be responsible for filling and maintaining the watering bags and watering the replacement

shrubs for the duration of the one-year warranty period (through 5/14/2017). They will perform the watering service during after-school hours or on weekends.

Trunk scuff on first tree at parking entrance

Third tree along parking entrance leans west

Jessie Fink met with Mike Polito of Tallgrass Restoration and Nick Fuller and Jessi DeMartini of the Forest Preserve District of DuPage County at 1 pm to review the planting strategy and staking layout for tree installation on the Reach 7 islands. Mike presented an alternate access diagram to the plan originally proposed by FPDDC which he felt would minimize impacts and avoid steep slopes. After walking the sites, FPDDC staff agreed to this approach (copy attached for reference). There was a concern regarding whether Riverview Drive on the south side of the river was a private drive that would limit access. After review of the DuPage County GIS map, this street shows as a publicly owned right-of-way, which can be used for access.

Tallgrass Restoration anticipates that each island will take two days to plant, with installation beginning on May 23. They will use a composite mat to bridge the wetland areas at the island access points. Access from the south will require removal of brush between the old haul road and the river. A path was selected that will primarily remove invasive honeysuckle and buckthorn without damaging native vegetation. A rubber-tracked skid steer will be used to dig the holes using an auger attachment, as well as to help move and plant the larger trees. They will also have a Kubota UTV onsite for additional logistic support. After installation, Tallgrass Restoration will maintain the plants using a watering system that can be filled with buckets from the river. FPDDC advised that the site sees

aggressive beaver activity, and recommended waist-high protection even if it requires pruning up lower branches on the trees.

Water levels in the river were currently down from the previous week's flooding. FPDDC noted that current river discharge was approximately 250 cfs, per the USGS monitoring station. At this discharge, the land bridges to the island were generally exposed with wet soils. The flotsam visibly deposited from last week's flood represented around 1,200 cfs. The real-time USGS data is available online and can be checked prior to plant installation at http://waterdata.usgs.gov/il/nwis/uv?05540095 if rain occurs.

Following the meeting, Jessie Fink field located the tree and shrub stakes with a hand-held GPS unit. The attached diagram shows the planting layout for reference. Note, two stakes on the northwest (larger) island were not located in the field. Based on the plant counts, these stakes are for a Quercus bicolor (QB) and a Cornus stolonifera (COS). Tallgrass Restoration shall advise during planting operations if they find the stakes and where the plants are located. Also, FPDDC provided one stake too many for the Corylus americana (CA) shrub locations. The Local Communities provided clarification via email on May 19 that one stake can be removed from the Northwest Island. Tallgrass Restoration shall select one CA stake for removal at their discretion based on ease of planting access and inform SmithGroupJJR of the revision for the project record.

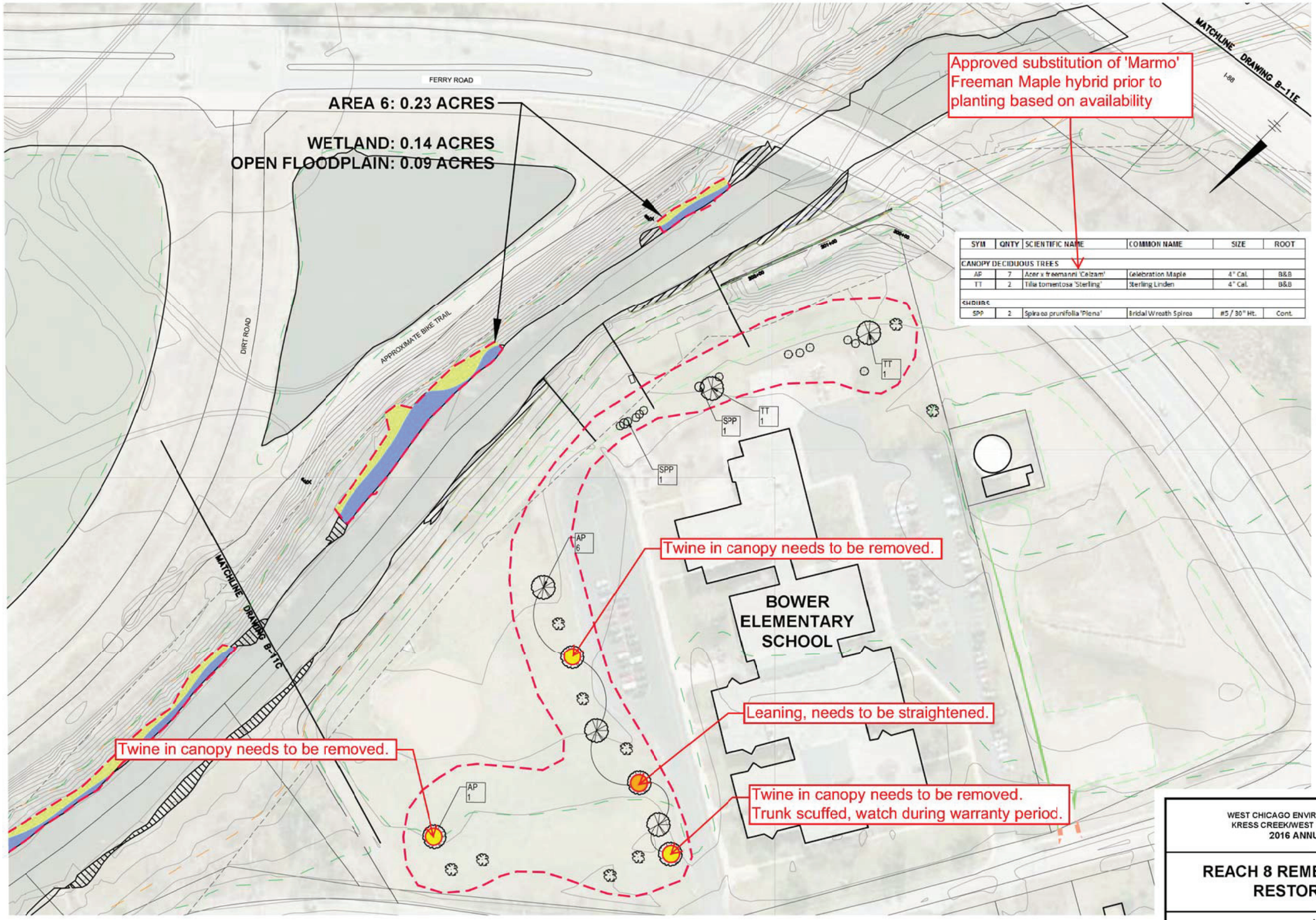
Land bridge access point to NW island

Example of plant material staking

Respectfully submitted,

Jessie Fink, Landscape Architect
SmithGroupJJR

Our summarization of this Field Observation Report is transcribed as above. Please notify the writer within five (5) business days of this transcription of any disagreement as the foregoing becomes part of the project record and is the basis upon which we will proceed.



SYM	QNTY	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
CANOPY DECIDUOUS TREES					
AP	7	Acer x freemanii 'Celzam'	Celebration Maple	4" Cal.	B&B
TT	2	Tilia tomentosa 'Sterling'	Sterling Linden	4" Cal.	B&B
SHRUBS					
SPP	2	Spiraea prunifolia 'Plena'	Bridal Wreath Spirea	#5 / 30" Ht.	Cont.

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- VEGETATION REMEDIATION LIMITS
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- OPEN FLOODPLAIN SEED MIX
- WETLAND SEED MIX
- EXISTING TREE AND SHRUB
- REPLACEMENT TREE
- REPLACEMENT SHRUB

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN OCTOBER 2011 THROUGH OCTOBER 2012.
2. REACH 8, AREA 6 VEGETATION MANAGEMENT ACTIVITIES:
   - 2016 Q1: PERFORM A CONTROLLED BURN OF THE ENTIRE AREA WITHIN THE VEGETATION REMEDIATION PROJECT LIMITS.
   - 2016 Q2: OVER-SEED AREA WITH SEED MIXES SHOWN ON PLAN.
   - 2016 Q2-Q3: SPOT HERBICIDE WEED CONTROL, 4 VISITS THROUGHOUT THE GROWING SEASON.
3. REPLACE TREES AND SHRUBS AT BOWER ELEMENTARY SCHOOL AS SHOWN. REMOVED TREES AND SHRUBS SHALL BE DISPOSED OF LEGALLY OFF-SITE. ACCESS TO SCHOOL GROUNDS REQUIRES PERMISSION FROM SCHOOL ADMINISTRATION. CALL JAMIE LOCK WITH DUPAGE COUNTRY AT (630) 407-5705 TO ARRANGE ACCESS.

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

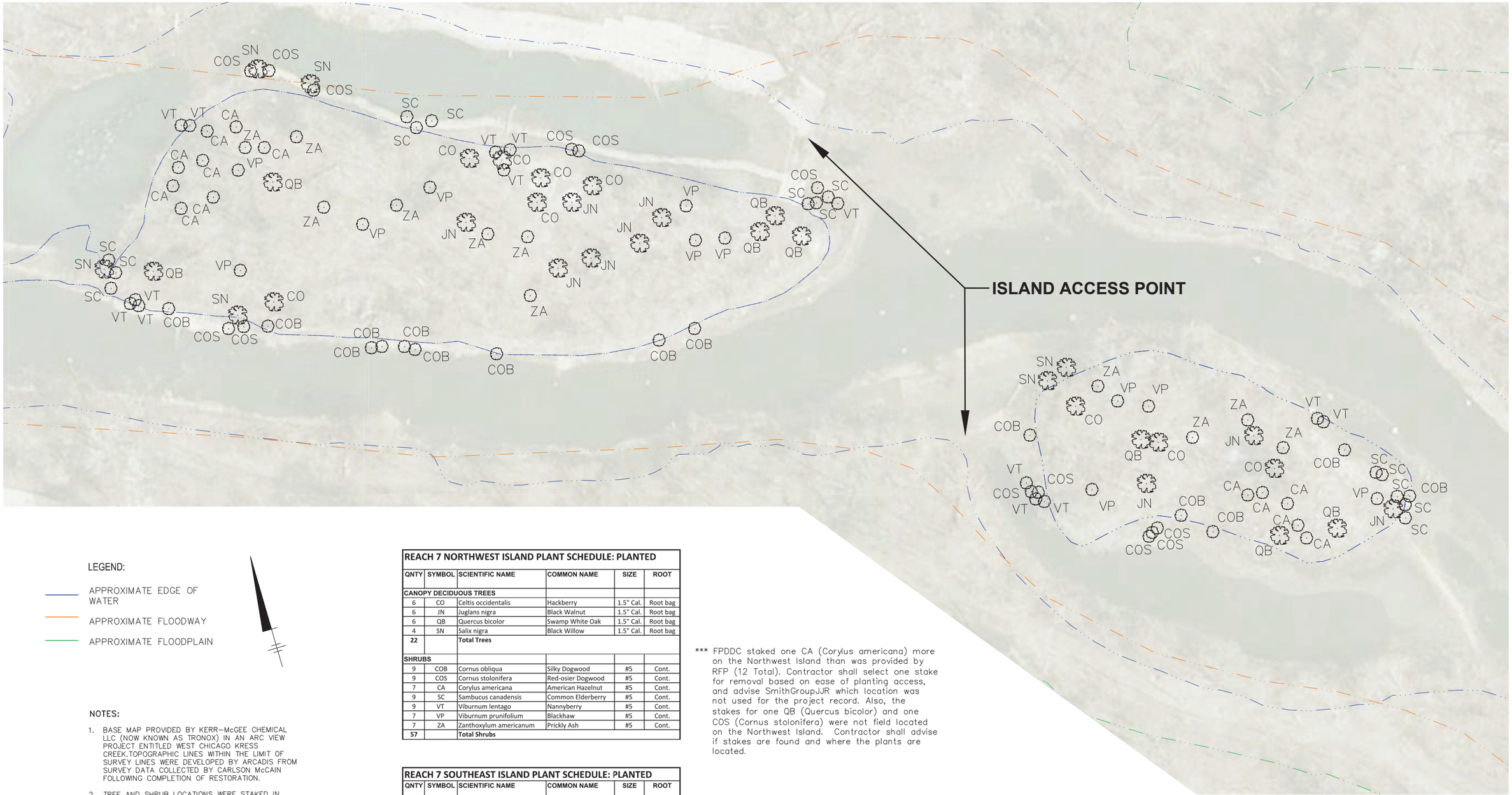
WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 REMEDIAL VEGETATION RESTORATION PLAN

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11D


Reach 7 tree planting
White - planting zones
Yellow - access paths
Provided by Tallgrass Restoration
Legend
Main Dr
Butterfield Rd
Illinois Prairie Trail
56
Stafford Pl
Riverview Dr
Manning Ave
Batavia Rd
Water Ave
Google earth
© 2016 Google
N
800 ft



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN

NOTES:

1. BASE MAP PROVIDED BY KERR–McGEE CHEMICAL LLC (NOW KNOWN AS TRONOX) IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK.TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINES WERE DEVELOPED BY ARCADIS FROM SURVEY DATA COLLECTED BY CARLSON McCAIN FOLLOWING COMPLETION OF RESTORATION.
2. TREE AND SHRUB LOCATIONS WERE STAKED IN FIELD BY THE FOREST PRESERVE DISTRICT OF DUPAGE COUNTY. LOCATIONS WERE LOCATED WITH A HANDHELD GPS BY SMITHGROUPJJR STAFF ON MAY 17, 2016.

REACH 7 NORTHWEST ISLAND PLANT SCHEDULE: PLANTED

QNTY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
CANOPY DECIDUOUS TREES					
6	CO	Celtis occidentalis	Hackberry	1.5" Cal.	Root bag
6	JN	Juglans nigra	Black Walnut	1.5" Cal.	Root bag
6	QB	Quercus bicolor	Swamp White Oak	1.5" Cal.	Root bag
4	SN	Salix nigra	Black Willow	1.5" Cal.	Root bag
22		**Total Trees**			
SHRUBS					
9	COB	Cornus obliqua	Silky Dogwood	#5	Cont.
9	COS	Cornus stolonifera	Red-osier Dogwood	#5	Cont.
7	CA	Corylus americana	American Hazelnut	#5	Cont.
9	SC	Sambucus canadensis	Common Elderberry	#5	Cont.
9	VT	Viburnum lentago	Nannyberry	#5	Cont.
7	VP	Viburnum prunifolium	Blackhaw	#5	Cont.
7	ZA	Zanthoxylum americanum	Prickly Ash	#5	Cont.
57		**Total Shrubs**			

REACH 7 SOUTHEAST ISLAND PLANT SCHEDULE: PLANTED

QNTY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
CANOPY DECIDUOUS TREES					
3	CO	Celtis occidentalis	Hackberry	1.5" Cal.	Root bag
3	JN	Juglans nigra	Black Walnut	1.5" Cal.	Root bag
3	QB	Quercus bicolor	Swamp White Oak	1.5" Cal.	Root bag
2	SN	Salix nigra	Black Willow	1.5" Cal.	Root bag
11		**Total Trees**			
SHRUBS					
5	COB	Cornus obliqua	Silky Dogwood	#5	Cont.
5	COS	Cornus stolonifera	Red-osier Dogwood	#5	Cont.
5	CA	Corylus americana	American Hazelnut	#5	Cont.
5	SC	Sambucus canadensis	Common Elderberry	#5	Cont.
5	VT	Viburnum lentago	Nannyberry	#5	Cont.
4	VP	Viburnum prunifolium	Blackhaw	#5	Cont.
4	ZA	Zanthoxylum americanum	Prickly Ash	#5	Cont.
33		**Total Shrubs**			

*** FPDDC staked one CA (Corylus americana) more on the Northwest Island than was provided by RFP (12 Total). Contractor shall select one stake for removal based on ease of planting access, and advise SmithGroupJJR which location was not used for the project record. Also, the stakes for one QB (Quercus bicolor) and one COS (Cornus stolonifera) were not field located on the Northwest Island. Contractor shall advise if stakes are found and where the plants are located.

0 40' 80'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015. DRAWING ISSUED MAY 19, 2016

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 7 REMEDIAL VEGETATION RESTORATION PLAN

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
7-TREE

SMITHGROUPJJR

FIELD OBSERVATION REPORT

Project name: Kress Creek / West Branch DuPage River Site
West Chicago Environmental Response Trust (WCERT)

Project number: 20752.002

Locations: Reach 8a: Bower Elementary School
Reach 7: Island Planting Areas

Date: June 14, 2016

Issue date: June 14, 2016

Participants: Jessie Fink, SmithGroupJJR
Conner Nett, SmithGroupJJR

Weather: Sunny, temperature in mid 80's to low 90's

Distribution:
Mike Polito, Tallgrass Restoration
Deepak Bhojwani, WCERT
Mark O'Leary / Cecily Cunz / Bill Stoll, Applied Ecological Services

Notes:

Replacement trees and shrubs were installed at Bower Elementary School on Saturday May 14 and were reviewed on May 17. This visit reviewed the punchlist items noted in the May 17 field report. All items were noted to be complete at this time, including that the leaning tree noted in the May report has been temporarily strapped to correct the condition.

Third tree along parking entrance has been strapped to correct leaning condition

SmithGroupJJR then reviewed the replacement trees and shrubs planted on the Reach 7 islands. Plants were installed the week of May 23. Several plants appeared to need water or minimal pruning as noted on the attached diagram. Final locations of the two plants that were not located during the staking review are also noted (*Quercus bicolor* (QB) and *Cornus stolonifera* (COS)).

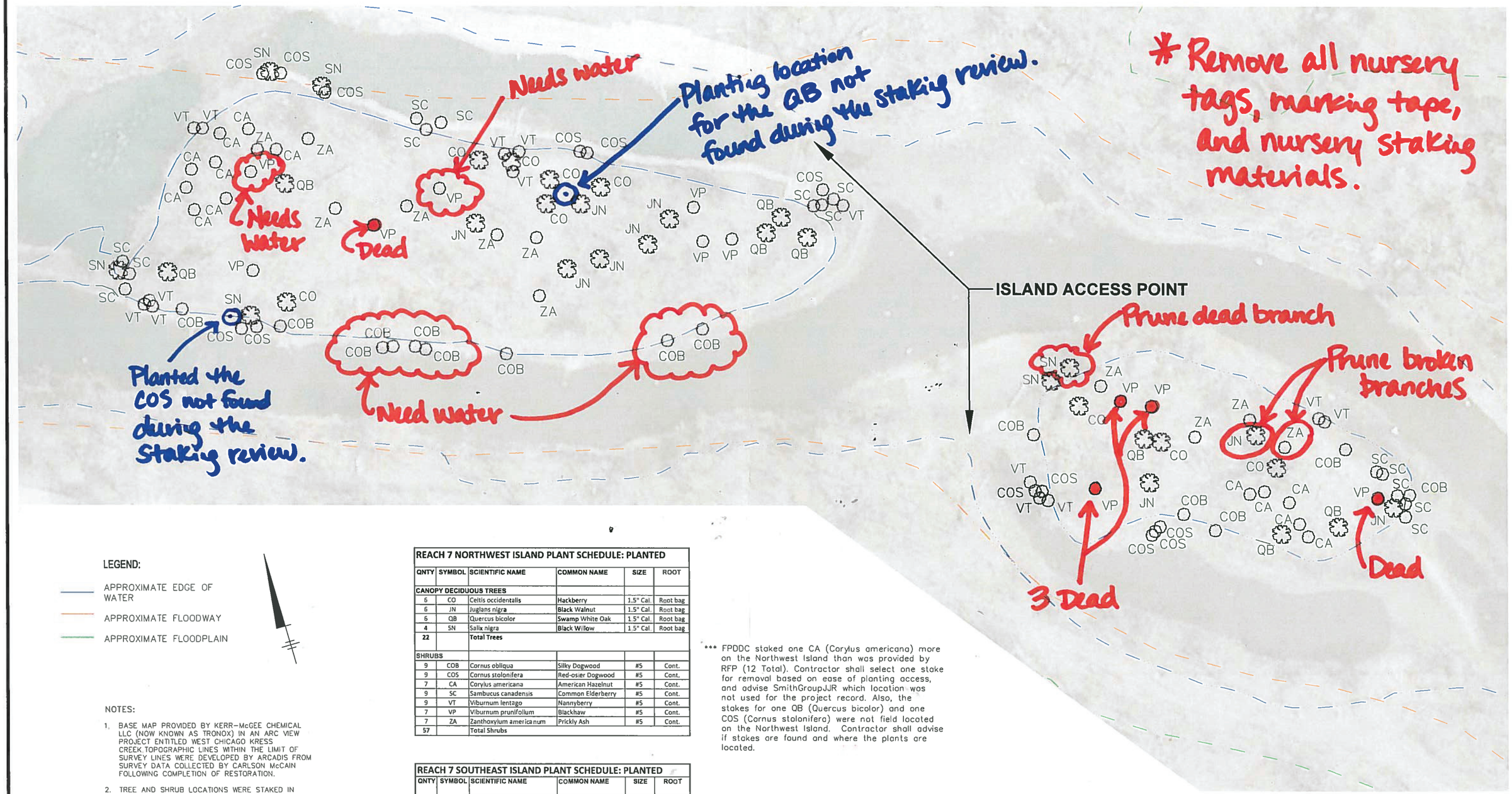
All nursery marking tape, tags, and nursery provided staking materials need to be removed at this time. Five of the eleven *Viburnum prunifolium* (VP) installed did not survive the initial planting operation and cannot be accepted at this time. These five shrubs in the locations noted on the attached diagram need to be replaced. All other plant material is in acceptable condition, with the one-year warranty period to run until May 27, 2017.

Example of dead Viburnum prunifolium

Respectfully submitted,

Jessie Fink, Landscape Architect
SmithGroupJJR

Our summarization of this Field Observation Report is transcribed as above. Please notify the writer within five (5) business days of this transcription of any disagreement as the foregoing becomes part of the project record and is the basis upon which we will proceed.



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN

NOTES:

1. BASE MAP PROVIDED BY KERR-McGEE CHEMICAL LLC (NOW KNOWN AS TRONOX) IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINES WERE DEVELOPED BY ARCADIS FROM SURVEY DATA COLLECTED BY CARLSON McCAIN FOLLOWING COMPLETION OF RESTORATION.
2. TREE AND SHRUB LOCATIONS WERE STAKED IN FIELD BY THE FOREST PRESERVE DISTRICT OF DUPAGE COUNTY. LOCATIONS WERE LOCATED WITH A HANDHELD GPS BY SMITHGROUPJJR STAFF ON MAY 17, 2016.

REACH 7 NORTHWEST ISLAND PLANT SCHEDULE: PLANTED

QNTY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
CANOPY DECIDUOUS TREES					
6	CO	Celtis occidentalis	Hackberry	1.5" Cal.	Root bag
6	JN	Juglans nigra	Black Walnut	1.5" Cal.	Root bag
6	QB	Quercus bicolor	Swamp White Oak	1.5" Cal.	Root bag
4	SN	Salix nigra	Black Willow	1.5" Cal.	Root bag
22		**Total Trees**			
SHRUBS					
9	COB	Cornus obliqua	Silky Dogwood	#5	Cont.
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9	SC	Sambucus canadensis	Common Elderberry	#5	Cont.
9	VT	Viburnum lentago	Nannyberry	#5	Cont.
7	VP	Viburnum prunifolium	Blackhaw	#5	Cont.
7	ZA	Zanthoxylum americanum	Prickly Ash	#5	Cont.
57		**Total Shrubs**			

REACH 7 SOUTHEAST ISLAND PLANT SCHEDULE: PLANTED

QNTY	SYMBOL	SCIENTIFIC NAME	COMMON NAME	SIZE	ROOT
CANOPY DECIDUOUS TREES					
3	CO	Celtis occidentalis	Hackberry	1.5" Cal.	Root bag
3	JN	Juglans nigra	Black Walnut	1.5" Cal.	Root bag
3	QB	Quercus bicolor	Swamp White Oak	1.5" Cal.	Root bag
2	SN	Salix nigra	Black Willow	1.5" Cal.	Root bag
11		**Total Trees**			
SHRUBS					
5	COB	Cornus obliqua	Silky Dogwood	#5	Cont.
5	COS	Cornus stolonifera	Red-osier Dogwood	#5	Cont.
5	CA	Corylus americana	American Hazelnut	#5	Cont.
5	SC	Sambucus canadensis	Common Elderberry	#5	Cont.
5	VT	Viburnum lentago	Nannyberry	#5	Cont.
4	VP	Viburnum prunifolium	Blackhaw	#5	Cont.
4	ZA	Zanthoxylum americanum	Prickly Ash	#5	Cont.
33		**Total Shrubs**			

*** FPDDC staked one CA (Corylus americana) more on the Northwest Island than was provided by RFP (12 Total). Contractor shall select one stake for removal based on ease of planting access, and advise SmithGroupJJR which location was not used for the project record. Also, the stakes for one QB (Quercus bicolor) and one COS (Cornus stolonifera) were not field located on the Northwest Island. Contractor shall advise if stakes are found and where the plants are located.

0 40' 80'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015. DRAWING ISSUED MAY 19, 2016

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 7 REMEDIAL VEGETATION RESTORATION PLAN

SMITHGROUPJJR
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SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
7-TREE

From: Jessie Fink [Jessie.Fink@smithgroupjjr.com]
Sent: Wednesday, June 29, 2016 2:49 PM
To: William W. Stoll; Mike Polito
Cc: Mark J. O'Leary; Bhojwani, Deepak; Cecily M. Cunz
Subject: RE: WCERT stewardship visit tomorrow

Hi Mike and Bill,
My thoughts on the conversation below:
1. Pod 8-4 was comprised of private lots and was deemed to be complete in May 2014 (no longer WCERT's responsibility). Mark mistakenly established transect T9 there last year, but it should be pulled / abandoned. Only Pod 8-3 is still under management in Reach 8 north of Warrenville Road.
2. Reach 7 achieved sign off after last year's monitoring activities. WCERT / Tallgrass are only responsible for tree and shrub installation on the islands, and placing seed on the haul routes used for access as requested by the FPDDC after the tree install was completed. We're still waiting to hear back on the seed mix that FPDDC wants us to use on the routes. The Forest Preserve is responsible for managing the herbaceous vegetation in Reach 7, and have been out to complete their own surveys of what is necessary (which is when they decided the haul routes needed to be seeded).

Please let me know if you have any further questions on what is covered in the contract.
Thanks,
Jess

From: William W. Stoll [mailto:bill@appliedeco.com]
Sent: Wednesday, June 29, 2016 2:17 PM
To: Mike Polito <Mike.Polito@tallgrassrestoration.com>
Cc: Jessie Fink <Jessie.Fink@smithgroupjjr.com>; Mark J. O'Leary <mark.oleary@appliedeco.com>; Bhojwani, Deepak <Deepak.Bhojwani@WestonSolutions.com>; Cecily M. Cunz <cecily.cunz@appliedeco.com>
Subject: RE: WCERT stewardship visit tomorrow

Mike – Thanks for the detailed response. See my responses below in red. Also, I'm going to inspect all the sites you are managing next week (Weds or Thurs). You are welcome to join me. Please provide me an update on your management at the end of this week.

Thanks,
Bill

William W. Stoll
Regional Manager / Senior Ecologist
Applied Ecological Services, Inc.
120 W. Main St.
West Dundee, IL 60118
847-844-9385 (o)
773-507-0983 (c)

From: Mike Polito [mailto:Mike.Polito@tallgrassrestoration.com]
Sent: Thursday, June 23, 2016 7:43 AM
To: William W. Stoll
Subject: RE: WCERT stewardship visit tomorrow

Hi Will,

Sorry, I had meant to address the email last week and got majorly sidetracked! For general reference, what's happened weed-controlwise this June has been a visit to Reach 8, Area 12 with a 4 person crew for broadleaf control on 6/5, a mowing on 6/14 at Reach 8, Area 12, and a smaller 2 person crew for invasive spraying/handpulling on 6.15 through Reach 8, R8-3, Area 5, 6, 11 and 12. Let me go number by numbers:

1. They have made a pass through Reach 8, Area 11 for invasives, thistle was on their hit list and looks browner now. There will be at least a couple more passes this year through that unit, so things should be kept firmly in check as the season progresses.
2. The initial pass through Area 12 was targeting broadleaved herbaceous weeds, and mainly focused on the section north of the path. The mowing Ryan performed was a patchier mowing than most, so he could dodge around areas with healthy, thriving warm season grasses and focus on knocking down the cottonwoods. The crew that hit Area 11 had time to work on parts of Area 12 as follow up to the larger pass through, but there will definitely be more work there for the next visit. I want the next wave of stewardship to start at Area 12, then progress up the river, so we get a good solid sweep through it.
3. I'm not sure if we have a crossed wire with the site names, but I don't remember Pod R8-3 being an RCG monoculture, but it did have a presence there along with Garlic Mustard that had almost dropped seed. The crew hit both while they were there and it should be looking better now. Area 4 is definitely dominated by RCG, but that is one of the two units we have planned to sprayout and reseed, followed by 3 years of maintenance and upkeep, so it's going to look a bit rough until that axe comes down. I mentioned Pod8-4 of Reach 8 below – not Pod R8-3. So, what is the status of Pod8-4?
4. Reach 7 isn't in our contract for stewardship or weed control, we're just planting trees and shrubs there, along with removing older tree/shrub protection. I know that a separate contract between V3 and the Dupage County Forest Preserve is happening in that stretch, though I don't know the full scope of their work. Perhaps we should forward my recommendations for Reach 7 to DCFPD.
5. I wanted to put 4+5 instead of just 4 above, to address both of these lines, but it wouldn't let me/I couldn't figure out how to make it let me.

Sorry again about the delay, let me know if that helps clear things up!

Mike

From: William W. Stoll [mailto:bill@appliedeco.com]
Sent: Wednesday, June 22, 2016 10:05 AM
To: Mike Polito <Mike.Polito@tallgrassrestoration.com>
Subject: FW: WCERT stewardship visit tomorrow

Hi Mike. Can you give me an update on management of the areas below. If Reach 7 received sign off – then I don't believe WCERT (and Tallgrass) would be responsible for managing it.

Let me know.

Thanks,
Bill

From: William W. Stoll
Sent: Wednesday, June 15, 2016 11:23 PM
To: 'Mike Polito'; 'Jessie Fink'; Mark J. O'Leary

Cc: Bhojwani, Deepak; Cecily M. Cunz
Subject: RE: WCERT stewardship visit tomorrow

Thanks for the update Mike.

Mark and I collected species lists in several areas of Reach 7 & 8 yesterday and made some management notes.

1) Reach 8, Area 11: scattered Canada thistle – spot spray (sounds like you may have hit this today).
2) Reach 8, Area 12; One of your crew (Ryan I believe) was mowing cottonwoods and other herbaceous weeds that were not herbicided the week before. Looks like clover kill rate was ~70%. There's a good size patch of Phragmites in the lowest part of the site (east side) and a large patch of sweet clover just west of the Phragmites. There is also quite a bit of Canada thistle and Reed Canary Grass (RCG) scattered throughout the site. There is also lots of buckthorn and honeysuckle resprouts south of the path in this area. Ryan may have hit some of these areas after we left.
3) Reach 8 (Pod R8-4) – Site dominated by RCG – probably needs to broadcast herbicided and reseeded.
4) Reach 7, Area 1: Canada thistle is dense and needs to be herbicided. There is also some crown vetch.
5) Reach 7, Areas 2 & 4: Mow cottonwood resprouts (many sapling size) found throughout site. There is also scattered crown vetch, Canada thistle and sweet clover throughout – spot herbicide.

Let me know if you have an questions.

Bill

From: Mike Polito [mailto:Mike.Polito@tallgrassrestoration.com]
Sent: Tuesday, June 14, 2016 2:26 PM
To: William W. Stoll; 'Jessie Fink'; Mark J. O'Leary
Cc: Bhojwani, Deepak; Cecily M. Cunz
Subject: WCERT stewardship visit tomorrow

Hello everyone,

Mike Polito with Tallgrass Restoration here. We have a crew scheduled to hit a bunch of the smaller sites; R8-3, Areas 5, 6, and 11 tomorrow. Hopefully the weather behaves and we don't need to reschedule; I will let you know if it happens.

Fingers crossed, and have a good one!

Mike

WCERT Native Vegetation Management Inspection Report

To:	Jessie Fink (SmithGroupJJR), Mike Polito (Tallgrass Restoration), Deepak Bhojwani (WCERT), Mark O'Leary (AES), and Cecily Cunz (AES)
From:	Bill Stoll (AES)
Project Name:	Kress Creek / West Branch DuPage River
Project Client:	West Chicago Environmental Response Trust (WCERT)
AES Project #:	16-0423
Date:	July 13, 2016

On July 6, Mike Polito of Tallgrass Restoration (Tallgrass) and I inspected all WCERT sites that Tallgrass has been managing this season. Below is a brief assessment of each of these sites and a list of management activities that have been completed and are planned for at each.

Reach 5D (Mack Road)
Site: 0.23 acres savanna restoration
Treatment: Tallgrass spot herbicided and seeded in June.
Condition: Cover crop is thick on the north side and very sparse on the south side, possibly due to shade (Photo 1).
Planned Management: Tallgrass will mow (high) cover crop (CC) and seed sparse area with shade tolerate CC (e.g. *Elymus virginicus*) in July.

Reach 5E
Site was not inspected because there has been no management yet this season.
Site: 4.3 acres mostly savanna restoration with some wetland and floodplain restoration
Planned Management: Tallgrass will broadcast herbicide savanna and spot herbicide wetland and floodplain areas twice (July/August and September), burn, and drill seed in the fall.

Reach 8 Pod R8-3
Site: 0.14 acres woodland and river bank management.
Treatment: Tallgrass pulled and removed garlic mustard (GM) in woods and spot herbicided reed canary grass (RCG) along river.
Condition: GM and honeysuckle are common in the woods and giant ragweed is found on the river bank (Photo 2).
Planned Management: Tallgrass will spot herbicide GM and cut and treat honeysuckle in woods and cut giant ragweed and spot herbicide invasives on river bank as needed.

Reach 8 Area 4
Site was not inspected because there has been no management yet this season.
Site: 0.35 acres wetland and floodplain restoration
Planned Management: Tallgrass will herbicide twice (July/August and September), burn, and seed (hand broadcast) in the fall.

Reach 8 Area 5
Site: 0.28 acres wetland and floodplain restoration
Treatment: Tallgrass spot herbicided RCG, Canada thistle, *Phragmites*, and common buckthorn in June.
Condition: Herbiciding of invasive species was effective (Photo 3).
Planned Management: Tallgrass will spot herbicide again and cut giant ragweed in July and over seed.

Reach 8 Area 6
Site: 0.23 acres wetland and floodplain restoration
Treatment: Tallgrass spot herbicided RCG, Canada thistle, teasel, and purple loosestrife (PL) in June.
Condition: Herbiciding of invasive species was effective, but cattail and *Phragmites* need treatment (Photo 4 & 5).
Planned Management: Tallgrass will spot herbicide PL and other invasives as needed and hand wick cattail and *Phragmites* in July and over seed.

Reach 8 Area 11
Site: 0.5 acres floodplain management
Treatment: Tallgrass spot herbicided mostly RCG and Canada thistle in June.
Condition: The site is dominated by natives (e.g. *Aster simplex*) and treatment of invasives was effective (Photos 6-9). Some invasives (e.g. sweet clover and ragweed) are still common.
Planned Management: Tallgrass will: 1)spot herbicide Canada thistle and common buckthorn; 2) spot herbicide or mow common ragweed, giant ragweed, sweet clover and other annual and biennial weeds; and 3) may cut and treat box elder and silver maple resprouts.

Reach 8 Area 12
Site: 8.98 acres of mostly prairie and some wetland and floodplain restoration
Treatment: Tallgrass spot herbicided clover, Canada thistle, RCG, and crow vetch in the prairie (N of the trail) in early June and then spot mowed woody resprouts (mostly cottonwood) in mid-June (on both sides of the trail).
Condition: Spot herbiciding and mowing of prairie was effective and appears to have hit most of the targeted species (>70%) (Photos 10-13).
Planned Management: Tallgrass will: 1) spot herbicide cottonwood resprouts; 2) hand wick cattail and *Phragmites*; 3) spot mow common ragweed and sweet clover, 4) spot mow invasive woody species south of the trail, and 4) spot herbicide and mow, as need, the floodplain areas S and E of the trail.

At the request of Jessie Fink, we also inspected shrub replacements and other items on two islands in the river in Reach 7 as noted in her June 14, 2016 report.

Reach 7 east island

- All four replacement *Viburnum prunifolium* (VP) were found alive and healthy (Photos 14 & 15).
- All pruning was completed.
- Tallgrass will remove all tape, tags, and nursery provided staking materials.
- Management note: Canada thistle is very common and honeysuckle resprouts are common on the island. Both should be herbicided.

Reach 7 west island

- One replacement *Viburnum prunifolium* (VP) was found alive and healthy (Photo 16).
- However, another dead VP was found. Tallgrass will replace the dead VP this fall.
- Tallgrass watered a VP (indicated on the map) by moving a watering bucket to this shrub.
- Silky dogwoods marked as needing water were check but not watered. They looked very healthy and not in need of water.
- Management note: Canada thistle and honeysuckle and buckthorn resprouts are also common on this island and should be herbicided.

Sincerely,

William W. Stoll
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Photos

Photo 1. Reach 5D – Mack Rd. Looking east.

Photo 4. Reach 8 Area 6, north section. Looking north.

Photo 2. Reach 8 Pod R8-3, river bank. Looking southeast.

Photo 5. Reach 8 Area 6, south section. Looking north.

Photo 3. Reach 8 Area 5. Looking north.

Photo 6. Reach 8 Area 11, east area. Looking east.

Photo 7. Reach 8 Area 11, west area. Looking northeast.

Photo 8. Reach 8 Area 11, river bank north of bridge.

Photo 9. Reach 8 Area 11, river bank south of bridge.

Photo 10. Reach 8 Area 12, north end of prairie restoration. Areas of spot mowing can be seen in photo looking north.

Photo 11. Reach 8 Area 12, central section of prairie restoration. Most of area in photo looking northeast has been mowed.

Photo 12. Reach 8 Area 12, south end of prairie restoration (N of path). Areas of spot mowing can be seen in photo looking northeast.

Photo 13. Reach 8 Area 12, prairie restoration (S of path). Areas of spot mowing can be seen in photo looking southeast.

Photo 14. Reach 7 east island. Replaced VP on west side of island.

Photo 15. Reach 7 east island. Replaced VP on east side of island.

Photo 16. Reach 7 west island. Replaced VP on west of island.

From: William W. Stoll
Sent: Wednesday, September 28, 2016 3:05 PM
To: Jessie Fink; 'Bhojwani, Deepak'
Cc: 'Mike Polito'; Mark J. O'Leary; Cecily M. Cunz
Subject: WCERT site inspection w/ Tallgrass

Jess and Deepak -

Below are notes from a site inspection Mark O'Leary and I had w/Mike Polito (Tallgrass) on 9/13. Let Mike or me know if you have any questions.

General Notes:

- Include in specifications (for contract) that low fuel areas should be mowed and burned and then seeded w/ native grasses to increase fine fuels and allow area to be burned.
- AES to get site boundary data (CAD) from JJR and covert to GIS (GPS coordinates) and supply to Tallgrass, so they can confirm boundaries in the field to ensure that they are managing the correct areas.

Reach 8

Area 11 – N of drive (T1)

- Area dominated by native forbs but needs more grasses to add fine fuel to allow area to burn
- Mow, burn, and then seeded w/ native grasses (e.g. *Elymus virginicus*) next spring
- Remove silver maple and black locust saplings

Area 11 – S of drive (T2)

- Area developing well and dominated by natives
- Herbicide and reseed (w/ specified mix) mowed access area this fall
- Tallgrass to contact FPD and inform them that area is part of WCERT and should not be used
- Remove honeysuckle and purple loosestrife and reduce Canada goldenrod

Area 12 – T7

- Area looks good – dominated by native species with few invasives.

Areas 12 – T8

- Uncertain if they are managing correct areas.
- To ensure correct areas are being managed in the future, Tallgrass will use GPS to locate management areas. See general note #2 above.
- Mow, burn, and then seed w/ grass heavy native mix next spring, except in areas where *Elymus virginicus* is already heavy.

Area 12 – T6

- Management appears to be in correct location.
- Recommended management – same as T8
- May be difficult to burn w/ numerous installed trees and shrubs to be protected.

Area 12 – T3 & T4

- Very good management of area

    - Cottonwood saplings reduced by ~90%; clover and sweet clover reduced by ~70%; Canada thistle reduced by 90+%; *Phragmites* reduced ~70%
- Spot herbicide patches of dense cool season grasses (e.g. Kentucky bluegrass, Hungarian brome, and tall fescue) before end of October.
- Spot herbicide *Phragmites* and RCG again this season
- Reseed (w/ specified seed mix) killed off areas this fall.
- North end with dense Canada goldenrod
    - Mow and burn next spring.
    - Herbicide Canada goldenrod basal rosettes in spring after burn.
    - Reseed (w/ specified seed mix) killed off areas in the spring.
    - Mow/cut Canada goldenrod late summer (i.e. August) next season to prevent it from setting seed.
- Swales
    - Monitor and manage as needed next season
    - Install Upland Prairie mix if needed next fall

Area 4

- Entire area killed off (was dominated by RCG)
- Will spot treat again as needed
- Will burn and seed this fall

Area 5

- Burn if possible

Area 6

- Herbicide *Phragmites* and purple loosestrife (T14 area)
- Herbidcide RCG (T15 area)

Pod R8-3

- Remove remaining honeysuckle (but keep Coralberry)
- Check and manage garlic mustard in spring

Reach 5E

- Most of site broadcast herbicided (~70% kill)
- Spot herbicided fingers near river
- Will herbicide again this season included missed areas (e.g. berm on NW side of T2 area)
- Will burn and overseed all killed areas this fall

Bill

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From: William W. Stoll
Sent: Friday, November 18, 2016 6:40 AM
To: Jessie Fink; Bhojwani, Deepak; Mark J. O'Leary; Cecily M. Cunz
Cc: Mike Polito; Kasey A. Clark
Subject: WCERT Site Visit Notes

WCERT Team – Kasey Clark (AES) and I visited the following WCERT sites with Mike Polito (Tallgrass) last Tuesday (11/8) to get an update on their management. Our notes are below.

Reach 8
Area 11- North of Drive
* No management this fall
* Management to occur next spring - see 9/13 site inspection notes
Area 11- South of Drive
* Access area was herbicided in October
* Area will be herbicided again and seeded next spring
* Other management to occur next spring - see 9/13 site inspection notes
Area 12- T7
* Did not visit - no fall management

Area 12- T8
* Did not visit - no fall management

Area 12- T6
* Did not visit - no fall management

Area 12- T3 & T4
* Spot herbicided cool season grasses (reed canary grass and blue grass) at end of October
* Cool season grasses will be herbicided again early next spring – will reseed killed areas if needed
* Nonnative dominant area between T4 and T6 and swales will be watched and managed as needed in 2017
* See 9/13 site inspection notes for other 2017 management recommendations
Area 4
* Did not visit
* Area will be burned and seeded this fall

Area 5
* Site was burned in April and overseeded in June
* Does not need a burn for at least 1 year

Area 6
* Very little Phragmites and purple loosestrife on site
* No management this fall
* Treat Phragmites and purple loosestrife next spring as needed

Pod R8-3
* Check reed canary grass near river next spring
* Cut and treat elm and silver maple near river
* Confirmed management recommendations from 9/13 site visit
Reach 5E
* Did not visit

* Area will be burned and seeded this fall

Mike and I will visit Reach 8 Area 4 and Reach 5E in early December after burning and seeding are complete.

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2016 WCERT Activities

Reach 5D

Date	Activity
6/15/2016	Herbicide application targetting clover, ragweed, thistle,and resprouts
7/9/2016	Mowed site
7/19/2016	herbicide application targetting clover, ragweed, reed canary grass, resprouts
8/14/2016	Mowed site
8/19/2016	herbicide application targetting ragweed
9/17/2016	Mowed site
10/7/2016	herbicide application targetting clover, ragweed

Reach 5E

Date	Activity
8/18/2016	sprayout
8/19/2016	additional sprayout work
9/29/2016	follow up sprayout work
11/9/2016	prescribed burn

Reach 7

Date	Activity
5/23/2016	tree and shrub planting
5/24/2016	tree and shrub planting
5/25/2016	tree and shrub planting
5/26/2016	tree and shrub planting
6/28/2016	replacement tree and shrub planting

Pod R8-3

Date	Activity
3/30/2016	prescribed burn
6/15/2016	hand pulled garlic mustard
7/19/2016	herbicide application targetting reed canary grass and resprouts
8/22/2016	Mowed smartweed, ragweed, and occasional nettle and sprayed motherwort, resprouts and burdock

Reach 8, Area 4

Date	Activity
8/18/2016	sprayout
11/9/2016	prescribed burn

Reach 8, area 5

Date	Activity
3/25/2016	installed burn breaks
4/4/2016	Prescribed burn
6/15/2016	Herbicide application targetting Reed Canary Grass, Purple Loosestrife, and resprouts
6/23/2016	hand broadcast seed mixes
7/19/2016	herbicide application targetting resprouts, reed canary grass, purple loosestrife
8/22/2016	Sprayed thistle, teasel, RCG, PLS, and handwicked phragmites

Reach 8, Area 6

Date	Activity
4/4/2016	Prescribed burn

6/15/2016	Herbicide application targetting Reed Canary Grass, Purple Loosestrife, Phragmites, resprouts.
6/23/2016	hand broadcast seed mixes
7/19/2016	herbicide application targetting purple loosestrife, reed canary grass, resprouts
8/22/2016	Sprayed thistle, teasel, RCG, PLS, and handwicked phragmites

Reach 8, Area 11

Date	Activity
3/25/2016	Installed burn breaks
4/4/2016	Prescribed burn
6/15/2016	Herbicide application targetting Reed Canary Grass, Purple Loosestrife
7/19/2016	herbicide application targetting reed canary grass, resprouts, thistle
8/22/2016	mowed ragweed, primrose, mugwort, Queen Anne's Lace, some heath aster
10/19/2016	herbicide application to Reed Canary Grass and Kentucky Bluegrass

Reach 8, Area 12

Date	Activity
3/25/2016	Installed burn breaks
4/5/2016	Prescribed burn
6/5/2016	herbicide application targetting red clover, sweet clover, thistle, crown vetch
6/9/2016	native seed installation
	selective mowing of annuals, bienniels (specifics missing, I believe it was common ragweed and queen
6/14/2016	anne's lace)
6/15/2016	Herbicide application targetting Reed Canary Grass, Purple Loosestrife, Phragmites
7/18/2016	Herbicide application targetting phragmites, cottonwoods, cattails, reed canary grass, thistle
7/19/2016	spot mowing targetting queen anne's lace
8/22/2016	sprayed cottonwood resprouts, thistle and crownt vetch. Mowed Queen Anne's Lace and ragweed
8/23/2016	sprayed sweet clover, red clover, thistle, and resprouts
8/25/2016	Sprayed red clover, Reed Canary Grass, thistle, resprouts
10/19/2016	herbicide application to Reed Canary Grass and Kentucky Bluegrass

2016 Annual Monitoring Report

Reaches 8A, 8B, 5D and the Mack Road Staging Area, of the Kress Creek / West Branch DuPage River Site

APPENDIX B

Vascular Plant Inventory Data

LOCALE: WCERT

BY: Reach 8A

NOTES: Mark O'Leary, William Stoll
2016 Herbaceous Vegetation Inventory- 6/14/2016 & 8/31/2016

CONSERVATISM-BASED METRICS			ADDITIONAL METRICS
MEAN C (NATIVE SPECIES)	2.93	SPECIES RICHNESS (ALL)	109
MEAN C (ALL SPECIES)	2.02	SPECIES RICHNESS (NATIVE)	75
MEAN C (NATIVE TREES)	1.67	% NON-NATIVE	0.31
MEAN C (NATIVE SHRUBS)	5.00	WET INDICATOR (ALL)	-0.02
MEAN C (NATIVE HERBACEOUS)	3.00	WET INDICATOR (NATIVE)	-0.35
FQAI (NATIVE SPECIES)	25.40	% HYDROPHYTE (MIDWEST)	0.61
FQAI (ALL SPECIES)	21.07	% NATIVE PERENNIAL	0.55
ADJUSTED FQAI	24.33	% NATIVE ANNUAL	0.13
% C VALUE 0	0.45	% ANNUAL	0.17
% C VALUE 1-3	0.26	% PERENNIAL	0.76
% C VALUE 4-6	0.23		
% C VALUE 7-10	0.06		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	FACU	1	Forb	Annual	Native
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
EUPRUG	Ageratina altissima	Eupatorium rugosum	White Snakeroot	4	FACU	FACU	1	Forb	Perennial	Native
ALLPET	Alliaria petiolata	ALLIARIA PETIOLATA	Garlic-Mustard	0	FAC	FACU	0	Forb	Biennial	Adventive
ALLCAN	Allium canadense	Allium canadense	Meadow Garlic	2	FACU	FACU	1	Forb	Perennial	Native
AMARET	Amaranthus retroflexus	AMARANTHUS RETROFLEXUS	Red-Root	0	FACU	FACU	1	Forb	Annual	Adventive
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
AMBTRI	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native

ARCMIN	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	FACU	1	Forb	Biennial	Adventive
ARTVUL	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	UPL	2	Forb	Perennial	Adventive
ASCINC	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	OBL	-2	Forb	Perennial	Native
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	UPL	1	Grass	Perennial	Adventive
CONSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXGRIS	Carex grisea	Carex grisea	Inflated Narrow-Leaf Sedge	2	FAC	FAC	0	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	7	FACW	FACW	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CHEALB	Chenopodium album	CHENOPODIUM ALBUM	Lamb's-Quarters	0	FACU	FACU	1	Forb	Annual	Adventive
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CONMAC	Conium maculatum	CONIUM MACULATUM	Poison-Hemlock	0	FACW	FACW	-1	Forb	Biennial	Adventive
CONARV	Convolvulus arvensis	CONVOLVULUS ARVENSIS	Field Bindweed	0	UPL	UPL	2	Forb	Perennial	Adventive
COROBL	Cornus obliqua	Cornus obliqua	Pale Dogwood	6	FACW	FACW	-1	Shrub	Perennial	Native
CRYCAN	Cryptotaenia canadensis	Cryptotaenia canadensis	Canadian Honewort	2	FAC	FAC	0	Forb	Perennial	Native
CYPESC	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPFUL	Dipsacus fullonum	DIPSACUS SYLVESTRIS	Fuller's Teasel	0	FACU	FACU	1	Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	FACU	1	Grass	Perennial	Native
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial	Native
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	UPL	2	Forb	Perennial	Native
EUPSER	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
EUPSES	Eupatorium sessilifolium var. brittonianum	Eupatorium sessilifolium brittonianum	Upland Boneset	10	UPL	UPL	2	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native

GALAPA	Galium aparine	Galium aparine	Sticky-Willy	1	FACU	FACU	1	Forb	Annual	Native
GALODO	Galium odoratum	0	Sweet Woodruff	0	UPL	UPL	2	Forb	Perennial	Adventive
GERMAC	Geranium maculatum	Geranium maculatum	Spotted Crane's-Bill	4	FACU	FACU	1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	0	FACU	FACU	1	Forb	Biennial	Native
HELAUT	Helenium autumnale	Helenium autumnale	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELSTR	Helianthus strumosus	Helianthus strumosus	Pale-Leaf Woodland Sunflower	5	UPL	UPL	2	Forb	Perennial	Native
HERMAX	Heracleum maximum	Heracleum maximum	American Cow-Parsnip	5	FACW	FACW	-1	Forb	Perennial	Native
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	5	FACU	FACU	1	Tree	Perennial	Native
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	4	OBL	OBL	-2	Grass	Perennial	Native
LEEVIR	Leersia virginica	Leersia virginica	White Grass	7	FACW	FACW	-1	Grass	Perennial	Native
LEMMIO	Lemna minor	Lemna minor	Common Duckweed	5	OBL	OBL	-2	Forb	Annual	Native
LEOCAR	Leonurus cardiaca	LEONURUS CARDIACA	Motherwort	0	UPL	UPL	2	Forb	Perennial	Adventive
LINBEN	Lindera benzoin	Lindera benzoin	Northern Spicebush	7	FACW	FACW	-1	Shrub	Perennial	Native
LOBSIP	Lobelia siphilitica	Lobelia siphilitica	Great Blue Lobelia	6	OBL	FACW	-2	Forb	Perennial	Native
LONMAA	Lonicera maackii	LONICERA MAACKII	Amur Honeysuckle	0	UPL	UPL	2	Shrub	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	5	OBL	OBL	-2	Forb	Perennial	Native
LYSNUM	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	FACW	-1	Forb	Perennial	Adventive
LYTSAL	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	FACU	1	Forb	Perennial	Native
MORALB	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
MUHFRO	Muhlenbergia frondosa	Muhlenbergia frondosa	Wire-Stem Muhly	3	FACW	FACW	-1	Grass	Perennial	Native
NEPCAT	Nepeta cataria	NEPETA CATARIA	Catnip	0	FACU	FACU	1	Forb	Perennial	Adventive
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	FACU	1	Forb	Perennial	Native
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	1	FAC	FAC	0	Grass	Annual	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2	FACU	FACU	1	Vine	Perennial	Native
POLAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
POLHYD	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native

POLLAP	Persicaria lapathifolia	Polygonum lapathifolium; POLYGONUM SCABRUM	Dock-Leaf Smartweed	0	FACW	FACW	-1	Forb	Annual	Native
POLPER	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
PERPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	FACW	-1	Forb	Annual	Native
POLVIR	Persicaria virginiana	Polygonum virginianum	Jumpseed	2	FAC	FAC	0	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHRAUSM	Phragmites australis ssp. americanus	Phragmites australis	Common Reed	1	FACW	FACW	-1	Grass	Perennial	Native
PILPUM	Pilea pumila	Pilea pumila	Canadian Clearweed	5	FACW	FACW	-1	Forb	Annual	Native
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	FACU	1	Forb	Perennial	Adventive
PLARUG	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	FAC	0	Forb	Annual	Native
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial	Adventive
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
RHUHIR	Rhus hirta	Rhus typhina	Staghorn Sumac	1	UPL	UPL	2	Tree	Perennial	Native
ROBPSE	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1	Tree	Perennial	Adventive
RUBLAC	Rubus laciniatus	RUBUS LACINIATUS	Cut-Leaf Blackberry	0	UPL	UPL	2	Shrub	Perennial	Adventive
RUBOCC	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	UPL	2	Shrub	Perennial	Native
RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	5	FACW	FACW	-1	Forb	Perennial	Native
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	FACU	1	Forb	Perennial	Native
RUMORB	Rumex britannica	Rumex orbiculatus	Greater Water Dock	8	OBL	OBL	-2	Forb	Perennial	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SCIFLU	Schoenoplectus fluviatilis	Scirpus fluviatilis	River Club-Rush	4	OBL	OBL	-2	Sedge	Perennial	Native
SCHTAB	Schoenoplectus tabernaemontani	Scirpus validus creber	Soft-Stem Club-Rush	5	OBL	OBL	-2	Sedge	Perennial	Native
SETGLA	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
STATEN	Stachys tenuifolia	Stachys tenuifolia hispida	Smooth Hedge-Nettle	5	OBL	FACW	-2	Forb	Perennial	Native
STEMED	Stellaria media	STELLARIA MEDIA	Common Chickweed	0	FACU	FACU	1	Forb	Annual	Adventive
ASTSAGD	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond's Aster	2	UPL	UPL	2	Forb	Perennial	Native
ASTSIM	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native

ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
ASTPUN	Symphyotrichum puniceum	Aster puniceus; Aster puniceus firmus	Purple-Stem American-Aster	7	OBL	OBL	-2	Forb	Perennial	Native
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
RHURAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
TRIHYB	Trifolium hybridum	TRIFOLIUM HYBRIDUM	Alsike Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TYPLAT	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	OBL	-2	Forb	Perennial	Native
ULMAME	Ulmus americana	Ulmus americana	American Elm	3	FACW	FACW	-1	Tree	Perennial	Native
ULMPUM	Ulmus pumila	ULMUS PUMILA	Siberian Elm	0	UPL	FACU	2	Tree	Perennial	Adventive
URTDIO	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	FAC	-1	Forb	Perennial	Native
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native

SITE: WCERT
LOCALE: Reach 8B
BY: Mark O'Leary, William Stoll, Cecily Cunz, Kasey Clark
NOTES: 2016 Herbaceous Inventory- 6/14/2016 & 8/31/2016

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.12	SPECIES RICHNESS (ALL)	148
MEAN C (ALL SPECIES)	2.39	SPECIES RICHNESS (NATIVE)	113
MEAN C (NATIVE TREES)	3.55	% NON-NATIVE	0.24
MEAN C (NATIVE SHRUBS)	3.30	WET INDICATOR (ALL)	-0.03
MEAN C (NATIVE HERBACEOUS)	3.07	WET INDICATOR (NATIVE)	-0.26
FQAI (NATIVE SPECIES)	33.21	% HYDROPHYTE (MIDWEST)	0.61
FQAI (ALL SPECIES)	29.02	% NATIVE PERENNIAL	0.62
ADJUSTED FQAI	27.30	% NATIVE ANNUAL	0.12
% C VALUE 0	0.38	% ANNUAL	0.16
% C VALUE 1-3	0.26	% PERENNIAL	0.78
% C VALUE 4-6	0.29		
% C VALUE 7-10	0.07		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	FACU	1	Forb	Annual	Native
ACENEG	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0	Tree	Perennial	Native
ACEPLA	Acer platanoides	ACER PLATANOIDES	Norway Maple	0	UPL	UPL	2	Tree	Perennial	Adventive
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	FACW	-1	Tree	Perennial	Native
AGRALB	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ALLCAN	Allium canadense	Allium canadense	Meadow Garlic	2	FACU	FACU	1	Forb	Perennial	Native
AMARET	Amaranthus retroflexus	AMARANTHUS RETROFLEXUS	Red-Root	0	FACU	FACU	1	Forb	Annual	Adventive
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
AMBTRI	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0	Forb	Perennial	Native

ASCINC	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	OBL	-2	Forb	Perennial	Native
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
BARVUL	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
BETNIG	Betula nigra	Betula nigra	River Birch	7	FACW	FACW	-1	Tree	Perennial	Native
BIDCER	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	OBL	-2	Forb	Annual	Native
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1	Forb	Annual	Native
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	2	OBL	OBL	-2	Forb	Perennial	Native
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	UPL	1	Grass	Perennial	Adventive
BROTEC	Bromus tectorum	BROMUS TECTORUM	Downy Chess	0	UPL	UPL	2	Grass	Annual	Adventive
CONSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXBLAN	Carex blanda	Carex blanda	Eastern Woodland Sedge	1	FAC	FAC	0	Sedge	Perennial	Native
CXCRIS	Carex cristatella	Carex cristatella	Crested Sedge	4	FACW	FACW	-1	Sedge	Perennial	Native
CXFRAN	Carex frankii	Carex frankii	Frank's Sedge	8	OBL	OBL	-2	Sedge	Perennial	Native
CXGRIS	Carex grisea	Carex grisea	Inflated Narrow-Leaf Sedge	2	FAC	FAC	0	Sedge	Perennial	Native
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	7	FACW	FACW	-1	Sedge	Perennial	Native
CXSTIP	Carex stipata	Carex stipata	Stalk-Grain Sedge	3	OBL	OBL	-2	Sedge	Perennial	Native
CXTENE	Carex tenera	Carex tenera	Quill Sedge	8	FACW	FAC	-1	Sedge	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
CELOCC	Celtis occidentalis	Celtis occidentalis	Common Hackberry	3	FAC	FAC	0	Tree	Perennial	Native
CICMAC	Cicuta maculata	Cicuta maculata	Spotted Water-Hemlock	6	OBL	OBL	-2	Forb	Perennial	Native
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1	Forb	Perennial	Adventive
CIRVUL	Cirsium vulgare	CIRSIUM VULGARE	Bull Thistle	0	FACU	FACU	1	Forb	Biennial	Adventive
CORTRI	Coreopsis tripteris	Coreopsis tripteris	Tall Tickseed	5	FAC	FAC	0	Forb	Perennial	Native
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
CRACRU	Crataegus crus-galli	Crataegus crus-galli	Cock-Spur Hawthorn	2	FAC	FAC	0	Tree	Perennial	Native
CRYCAN	Cryptotaenia canadensis	Cryptotaenia canadensis	Canadian Honewort	2	FAC	FAC	0	Forb	Perennial	Native
CYPESC	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
DIPSYL	Dipsacus fullonum	DIPSACUS SYLVESTRIS	Fuller's Teasel	0	FACU	FACU	1	Forb	Biennial	Adventive
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
ELAUMB	Elaeagnus umbellata	ELAEAGNUS UMBELLATA	Autumn-Olive	0	UPL	UPL	2	Shrub	Perennial	Adventive
ELEERY	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major;	Common Spike-Rush	2	OBL	OBL	-2	Sedge	Perennial	Native

ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	FACU	1	Grass	Perennial	Native
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
ERYYUC	Eryngium yuccifolium	Eryngium yuccifolium	Button Eryngo	9	FAC	FAC	0	Forb	Perennial	Native
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	UPL	2	Forb	Perennial	Native
EUPSER	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
EUTGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1	Forb	Perennial	Native
FRAPENS	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	FACW	-1	Tree	Perennial	Native
GALAPA	Galium aparine	Galium aparine	Sticky-Willy	1	FACU	FACU	1	Forb	Annual	Native
GEUALE	Geum aleppicum	Geum aleppicum strictum	Yellow Avens	7	FACW	FAC	-1	Forb	Perennial	Native
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial	Native
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	FACU	1	Forb	Perennial	Adventive
GLYSTR	Glyceria striata	Glyceria striata	Fowl Manna Grass	4	OBL	OBL	-2	Grass	Perennial	Native
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	0	FACU	FACU	1	Forb	Biennial	Native
HELAUT	Helenium autumnale	Helenium autumnale	Fall Sneezeweed	5	FACW	FACW	-1	Forb	Perennial	Native
HELHEL	Heliopsis helianthoides	Heliopsis helianthoides	Smooth Oxeye	5	FACU	FACU	1	Forb	Perennial	Native
HORJUB	Hordeum jubatum	HORDEUM JUBATUM	Fox-Tail Barley	0	FAC	FAC	0	Grass	Perennial	Adventive
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
IRIVIR	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5	OBL	OBL	-2	Forb	Perennial	Native
JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	5	FACU	FACU	1	Tree	Perennial	Native
JUNINT	Juncus interior	Juncus interior	Inland Rush	6	FAC	FAC	0	Forb	Perennial	Native
LACSER	Lactuca serriola	LACTUCA SERRIOLA	Prickly Lettuce	0	FACU	FACU	1	Forb	Biennial	Adventive
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	4	OBL	OBL	-2	Grass	Perennial	Native
LEOCAR	Leonurus cardiaca	LEONURUS CARDIACA	Motherwort	0	UPL	UPL	2	Forb	Perennial	Adventive
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	5	OBL	OBL	-2	Forb	Perennial	Native
LYSNUM	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	FACW	-1	Forb	Perennial	Adventive
MEDLUP	Medicago lupulina	MEDICAGO LUPULINA	Black Medick	0	FACU	FACU	1	Forb	Annual	Adventive
MELLOF	Melilotus officinalis	MELILOTUS ALBA	Yellow Sweet-Clover	0	FACU	FACU	1	Forb	Biennial	Adventive
MORALB	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
OENBIE	Oenothera biennis	Oenothera biennis	King's-Cureall	0	FACU	FACU	1	Forb	Biennial	Native
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	FACU	1	Forb	Perennial	Native

PANDIC	Panicum dichotomiflorum	Panicum dichotomiflorum	Fall Panic Grass	0	FACW	FACW	-1	Grass	Annual	Native
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2	FACU	FACU	1	Vine	Perennial	Native
PENDIG	Penstemon digitalis	Penstemon digitalis	Foxglove Beardtongue	4	FAC	FAC	0	Forb	Perennial	Native
PERAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	OBL	-2	Forb	Perennial	Native
PERHYR	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	OBL	-2	Forb	Annual	Native
POLPER	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	FAC	-1	Forb	Annual	Adventive
POLPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	FACW	-1	Forb	Annual	Native
POLVIR	Persicaria virginiana	Polygonum virginianum	Jumpseed	2	FAC	FAC	0	Forb	Perennial	Native
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYVIR	Physostegia virginiana	Physostegia virginiana	Obedient-Plant	6	FACW	FACW	-1	Forb	Perennial	Native
PHYAME	Phytolacca americana	Phytolacca americana	American Pokeweed	1	FACU	FACU	1	Forb	Perennial	Native
PILPUM	Pilea pumila	Pilea pumila	Canadian Clearweed	5	FACW	FACW	-1	Forb	Annual	Native
PLARUG	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	FAC	0	Forb	Annual	Native
PLAOCC	Platanus occidentalis	Platanus occidentalis	American Sycamore	9	FACW	FACW	-1	Tree	Perennial	Native
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
DUCIND	Potentilla indica	DUCHESNEA INDICA	Indian-Strawberry	0	FACU	FACU	1	Forb	Perennial	Adventive
POTNOR	Potentilla norvegica	Potentilla norvegica	Norwegian Cinquefoil	0	FAC	FAC	0	Forb	Annual	Native
PRUVUV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	FAC	0	Forb	Perennial	Adventive
PRUVIR	Prunus virginiana	Prunus virginiana	Choke Cherry	3	FACU	FACU	1	Shrub	Perennial	Native
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5	FACW	FACW	-1	Forb	Perennial	Native
QUEBIC	Quercus bicolor	Quercus bicolor	Swamp White Oak	6	FACW	FACW	-1	Tree	Perennial	Native
RANABO	Ranunculus abortivus	Ranunculus abortivus	Kidney-Leaf Buttercup	0	FACW	FAC	-1	Forb	Annual	Native
RANSCE	Ranunculus sceleratus	Ranunculus sceleratus	Cursed Buttercup	6	OBL	OBL	-2	Forb	Annual	Native
RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4	UPL	UPL	2	Forb	Perennial	Native
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
RHUGLA	Rhus glabra	Rhus glabra	Smooth Sumac	1	UPL	UPL	2	Shrub	Perennial	Native
RIBAME	Ribes americanum	Ribes americanum	Wild Black Currant	7	FACW	FACW	-1	Shrub	Perennial	Native
ROBPSE	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	FACU	1	Tree	Perennial	Adventive
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
ROSSET	Rosa setigera	Rosa setigera	Climbing Rose	7	FACU	FACU	1	Shrub	Perennial	Native
RUBALL	Rubus allegheniensis	Rubus allegheniensis	Allegheny Blackberry	3	FACU	FACU	1	Shrub	Perennial	Native
RUBOCC	Rubus occidentalis	Rubus	Black	2	UPL	UPL	2	Shrub	Perennial	Native

		occidentalis	Raspberry							
RUDHIR	Rudbeckia hirta	Rudbeckia hirta	Black-Eyed-Susan	1	FACU	FACU	1	Forb	Perennial	Native
RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	5	FACW	FACW	-1	Forb	Perennial	Native
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	FACU	1	Forb	Perennial	Native
RUDTRI	Rudbeckia triloba	Rudbeckia triloba	Brown-Eyed-Susan	3	FACU	FACU	1	Forb	Annual	Native
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
SAGLAT	Sagittaria latifolia	Sagittaria latifolia	Duck-Potato	4	OBL	OBL	-2	Forb	Perennial	Native
SALINT	Salix interior	Salix interior	Sandbar Willow	1	FACW	FACW	-1	Shrub	Perennial	Native
SALNIG	Salix nigra	Salix nigra	Black Willow	4	OBL	OBL	-2	Tree	Perennial	Native
FESELA	Schedonorus pratensis	FESTUCA ELATIOR	Meadow Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
CORVAR	Securigera varia	CORONILLA VARIA	Crown Vetch	0	UPL	UPL	2	Forb	Perennial	Adventive
SETFAB	Setaria faberi	SETARIA FABERI	Japanese Bristle Grass	0	FACU	FACU	1	Grass	Annual	Adventive
SILINT	Silphium integrifolium	Silphium integrifolium deamii	Entire-Leaf Rosinweed	5	UPL	FAC	2	Forb	Perennial	Native
BRAKAB	Sinapis arvensis	Brassica kaber	Charlock	0	UPL	UPL	2	Forb	Annual	Native
SMILAS	Smilax lasioneuron	Smilax lasioneura	Common Carrion Flower	5	UPL	UPL	2	Vine	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
SOLRIG	Solidago rigida	Solidago rigida	Hard-Leaf Flat-Top-Goldenrod	4	FACU	FACU	1	Forb	Perennial	Native
SORNUT	Sorghastrum nutans	Sorghastrum nutans	Yellow Indian Grass	5	FACU	FACU	1	Grass	Perennial	Native
SPAEUR	Sparganium eurycarpum	Sparganium eurycarpum	Broad-Fruit Burr-Reed	6	OBL	OBL	-2	Forb	Perennial	Native
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	FACW	-1	Grass	Perennial	Native
STAPALH	Stachys pilosa	Stachys palustris homotricha	Hairy Hedge-Nettle	5	FACW	FACW	-1	Forb	Perennial	Native
ASTSAGD	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond's Aster	2	UPL	UPL	2	Forb	Perennial	Native
ASTSIM	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
ASTNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	FACW	-1	Forb	Perennial	Native
ASTPIL	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial	Native
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
RHURAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	FAC	0	Vine	Perennial	Native
TRIHYB	Trifolium hybridum	TRIFOLIUM HYBRIDUM	Alsike Clover	0	FACU	FACU	1	Forb	Perennial	Adventive
TRIPRA	Trifolium pratense	TRIFOLIUM	Red Clover	0	FACU	FACU	1	Forb	Perennial	Adventive

		PRATENSE								
TYPLAT	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	OBL	-2	Forb	Perennial	Native
URTDIO	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	FAC	-1	Forb	Perennial	Native
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial	Native
VERSTR	Verbena stricta	Verbena stricta	Hoary Vervain	4	UPL	UPL	2	Forb	Perennial	Native
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	FAC	0	Forb	Perennial	Native
VERFAS	Vernonia fasciculata	Vernonia fasciculata	Prairie Ironweed	5	FACW	FACW	-1	Forb	Perennial	Native
VIBDEN	Viburnum dentatum	VIBURNUM DENTATUM	Southern Arrow-Wood	0	FAC	FAC	0	Shrub	Perennial	Adventive
VIBPRU	Viburnum prunifolium	Viburnum prunifolium	Smooth Blackhaw	5	FACU	FACU	1	Shrub	Perennial	Native
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial	Native
VITRIP	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	FAC	-1	Vine	Perennial	Native
XANAME	Zanthoxylum americanum	Xanthoxylum americanum	Toothachetree	3	FACU	FACU	1	Shrub	Perennial	Native

SITE: WCERT
LOCALE: Mack Rd.
BY: Mark O'Leary & Cecily Cunz
NOTES: 2016 Fall Vegetation Inventory-8/30/2016

CONSERVATISM- BASED METRICS	
MEAN C (NATIVE SPECIES)	3.04
MEAN C (ALL SPECIES)	2.11
MEAN C (NATIVE TREES)	3.67
MEAN C (NATIVE SHRUBS)	0.00
MEAN C (NATIVE HERBACEOUS)	2.95
FQAI (NATIVE SPECIES)	15.20
FQAI (ALL SPECIES)	12.67
ADJUSTED FQAI	25.33
% C VALUE 0	0.47
% C VALUE 1-3	0.14
% C VALUE 4-6	0.36
% C VALUE 7-10	0.03

ADDITIONAL METRICS	
SPECIES RICHNESS (ALL)	36
SPECIES RICHNESS (NATIVE)	25
% NON-NATIVE	0.31
WET INDICATOR (ALL)	0.56
WET INDICATOR (NATIVE)	0.40
% HYDROPHYTE (MIDWEST)	0.42
% NATIVE PERENNIAL	0.67
% NATIVE ANNUAL	0.00
% ANNUAL	0.00
% PERENNIAL	0.94

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
AGRALB	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ANDGER	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	FACU	0	Grass	Perennial	Native
ARTVUL	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	UPL	2	Forb	Perennial	Adventive
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	UPL	1	Forb	Perennial	Native
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	UPL	1	Grass	Perennial	Adventive
CONSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0	Forb	Perennial	Native
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1	Sedge	Perennial	Native
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	FACU	1	Grass	Perennial	Native
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial	Native
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	UPL	2	Forb	Perennial	Native
EUPSER	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	FAC	0	Forb	Perennial	Native
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	FACW	-1	Forb	Perennial	Native

JUGNIG	Juglans nigra	Juglans nigra	Black Walnut	5	FACU	FACU	1	Tree	Perennial	Native
LINVUL	Linaria vulgaris	LINARIA VULGARIS	Butter-and-Eggs	0	UPL	UPL	2	Forb	Perennial	Adventive
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	FACU	1	Forb	Perennial	Native
MORALB	Morus alba	MORUS ALBA	White Mulberry	0	FAC	FACU	0	Tree	Perennial	Adventive
PANVIR	Panicum virgatum	Panicum virgatum	Wand Panic Grass	5	FAC	FAC	0	Grass	Perennial	Native
PHRAUSU	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	FACW	-1	Grass	Perennial	Adventive
PHYSUB	Physalis subglabrata	Physalis subglabrata	Smooth Ground Cherry	0	UPL	UPL	2	Forb	Perennial	Native
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	FACU	1	Forb	Perennial	Adventive
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	FAC	0	Tree	Perennial	Native
ROSMUL	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0	FACU	FACU	1	Shrub	Perennial	Adventive
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	FACU	1	Forb	Perennial	Native
FESELA	Schedonorus pratensis	FESTUCA ELATIOR	Meadow Fescue	0	FACU	FACU	1	Grass	Perennial	Adventive
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
SILINT	Silphium integrifolium	Silphium integrifolium deamii	Entire-Leaf Rosinweed	5	UPL	FAC	2	Forb	Perennial	Native
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial	Native
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	FACW	-1	Forb	Perennial	Native
SORNUT	Sorghastrum nutans	Sorghastrum nutans	Yellow Indian Grass	5	FACU	FACU	1	Grass	Perennial	Native
ASTERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	5	FACU	FACU	1	Forb	Perennial	Native
ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	FAC	-1	Forb	Perennial	Native
ASTPIL	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial	Native
ULMPUM	Ulmus pumila	ULMUS PUMILA	Siberian Elm	0	UPL	FACU	2	Tree	Perennial	Adventive
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	FAC	0	Tree	Perennial	Native
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	FAC	0	Forb	Perennial	Native

SITE: WCERT
LOCALE: Reach 5D- Mack Rd.
BY: William Stoll and Kasey Clark
NOTES: 2016 Fall Vegetation Inventory- 8/30/2016

CONSERVATISM- BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.70	SPECIES RICHNESS (ALL)	37
MEAN C (ALL SPECIES)	1.46	SPECIES RICHNESS (NATIVE)	20
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.46
MEAN C (NATIVE SHRUBS)	9.00	WET INDICATOR (ALL)	0.68
MEAN C (NATIVE HERBACEOUS)	2.22	WET INDICATOR (NATIVE)	0.50
FQAI (NATIVE SPECIES)	12.07	% HYDROPHYTE (MIDWEST)	0.32
FQAI (ALL SPECIES)	8.88	% NATIVE PERENNIAL	0.41
ADJUSTED FQAI	19.85	% NATIVE ANNUAL	0.11
% C VALUE 0	0.62	% ANNUAL	0.27
% C VALUE 1-3	0.14	% PERENNIAL	0.65
% C VALUE 4-6	0.22		
% C VALUE 7-10	0.03		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	FACU	1	Forb	Annual
ALLPET	Alliaria petiolata	ALLIARIA PETIOLATA	Garlic-Mustard	0	FAC	FACU	0	Forb	Biennial
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual
AVESAT	Avena sativa	AVENA SATIVA	Oats	0	UPL	UPL	2	Grass	Annual
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	UPL	1	Grass	Perennial
CERVUL	Cerastium fontanum	CERASTIUM VULGATUM	Common Mouse-Ear Chickweed	0	FACU	FACU	1	Forb	Perennial
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial
ECHPUR	Echinacea purpurea	Echinacea purpurea	Purple Coneflower	3	UPL	UPL	2	Forb	Perennial
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual

ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	FACU	1	Grass	Perennial
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	FACW	-1	Grass	Perennial
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	FACU	1	Forb	Biennial
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	1	FACU	FACU	1	Forb	Perennial
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	FAC	0	Forb	Perennial
HELHEL	Heliopsis helianthoides	Heliopsis helianthoides	Smooth Oxeye	5	FACU	FACU	1	Forb	Perennial
MEDLUP	Medicago lupulina	MEDICAGO LUPULINA	Black Medick	0	FACU	FACU	1	Forb	Annual
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	FACU	1	Forb	Perennial
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	FACU	1	Forb	Perennial
PASLAE	Paspalum laeve	PASPALUM LAEVE	Field Crown Grass	0	FACW	FAC	-1	Grass	Perennial
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	FACU	1	Forb	Perennial
PLARUG	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	FAC	0	Forb	Annual
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	FACU	0	Grass	Perennial
POLAVI	Polygonum aviculare	POLYGONUM AVICULARE	Yard Knotweed	0	FAC	FACU	0	Forb	Annual
RUBHIS	Rubus hispidus	Rubus hispidus	Bristly Dewberry	9	FACW	FACW	-1	Shrub	Perennial
FESELA	Schedonorus pratensis	FESTUCA ELATIOR	Meadow Fescue	0	FACU	FACU	1	Grass	Perennial
SETFAB	Setaria faberi	SETARIA FABERI	Japanese Bristle Grass	0	FACU	FACU	1	Grass	Annual
SETVIR	Setaria viridis	SETARIA VIRIDIS	Green Foxtail	0	UPL	UPL	2	Grass	Annual
SMILAS	Smilax lasioneuron	Smilax lasioneura	Common Carrion Flower	5	UPL	UPL	2	Vine	Perennial
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	FACU	1	Forb	Perennial
SONASP	Sonchus asper	SONCHUS ASPER	Spiny-Leaf Sow-Thistle	0	FACU	FACU	1	Forb	Annual
ASTERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	5	FACU	FACU	1	Forb	Perennial
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	FACU	1	Forb	Perennial
TRIREP	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	FACU	1	Forb	Perennial
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	FACW	-1	Forb	Perennial
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	FAC	0	Forb	Perennial
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	FAC	0	Forb	Perennial

2016 Annual Monitoring Report

Reaches 8, and the Mack Road Staging Area, of the Kress Creek / West Branch DuPage River Site

APPENDIX C

Vascular Plant Transect Data

SITE: WCERT
LOCALE: Reach 8A
BY: Mark O'Leary, William Stoll
NOTES: 2016 Fall Vegetation Transects 10, 13-15- 8/30/2016

TRANSECT QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS
T13-01	9	9	9	9	1	1	1	1
T13-02	3.71	3.25	9.83	9.19	-1	-0.75	7	8
T13-03	2.85	2.47	10.26	9.55	-0.31	-0.13	13	15
T13-04	4.33	3.25	10.61	9.19	-0.5	-0.38	6	8
T13-05	4.4	2.44	9.84	7.33	-0.8	-0.44	5	9
T13-06	3.71	3.25	9.83	9.19	-1.14	-1.13	7	8
T14-01	2.67	2.29	6.53	6.05	-0.33	-0.14	6	7
T14-02	1.2	1.2	2.68	2.68	0.4	0.4	5	5
T14-03	2.67	1.85	8	6.66	-0.33	0.15	9	13
T14-04	1.29	1	3.4	3	0	0.11	7	9
T15-01	5	5	5	5	-1	-1	1	1
T15-02	5	5	5	5	-1	-1	1	1
T15-03	3	3	3	3	0	0	1	1
T15-04	1	1	1	1	0	0	1	1
T15-05		0	0	0		-1		1
T15-06	0	0	0	0	-1	-1	1	1
T15-07	3	3	3	3	0	0	1	1
AVG	3.11	2.76	5.71	5.23	-0.35	-0.31	4.24	5.29
STD	2.19	2.16	3.79	3.37	0.59	0.6	3.72	4.7

TRANSECT SUMMARY

C	NUMBER				
0	8			33	NATIVE SPECIES
1	5			42	TOTAL SPECIES
2	6			2.64	NATIVE MEAN C
3	2			2.07	W/Adventives
4	6	0:	24.24%	15.14	NATIVE FQI
5	2	1 to 3:	39.39%	13.42	W/Adventives
6	0	4 to 7:	33.33%	-0.58	NATIVE MEAN W
7	3	8 to 10:	3.03%	-0.36	W/Adventives
8	0				
9	1				
10	0				

PHYSIOGNOMY

NATIVE	33	78.57%	ADVENTIVE	9	21.43%
Tree	2	4.76%	Tree	0	0.00%
Shrub	0	0.00%	Shrub	0	0.00%

Vine	1	2.38%	Vine	0	0.00%
Forb	23	54.76%	Forb	7	16.67%
Grass	4	9.52%	Grass	2	4.76%
Sedge	3	7.14%	Sedge	0	0.00%
Fern	0	0.00%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOG	FRQ	COV	RFRQ	RCOV	RIV
N Tree	2	8	2.2	0.8	1.5
N Vine	1	3	1.1	0.3	0.7
N Forb	58	688	64.4	65.8	65.1
N Grass	5	49	5.6	4.7	5.1
N Sedge	6	40	6.7	3.8	5.2
A Forb	15	236	16.7	22.6	19.6
A Grass	3	21	3.3	2	2.7

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME (NWPL/MOHLENBROCK)	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Symphyotrichum lanceolatum	3	FAC	10	211	11.1	20.2	15.7
Glechoma hederacea	0	FACU	6	172	6.7	16.5	11.6
Rudbeckia subtomentosa	9	FACU	4	90	4.4	8.6	6.5
Pilea pumila	5	FACW	4	68	4.4	6.5	5.5
Solidago canadensis	1	FACU	4	62	4.4	5.9	5.2
Rudbeckia laciniata	5	FACW	3	58	3.3	5.6	4.4
Lysimachia nummularia	0	FACW	2	55	2.2	5.3	3.7
Symphyotrichum lateriflorum	4	FACW	4	43	4.4	4.1	4.3
Calystegia sepium	1	FAC	3	33	3.3	3.2	3.2
Solidago gigantea	4	FACW	2	32	2.2	3.1	2.6
Carex grisea	2	FAC	4	27	4.4	2.6	3.5
Viola sororia	3	FAC	2	21	2.2	2	2.1
Elymus virginicus	4	FACW	2	20	2.2	1.9	2.1
Persicaria amphibia	4	OBL	5	20	5.6	1.9	3.7
Phalaris arundinacea	0	FACW	2	20	2.2	1.9	2.1
Leersia virginica	7	FACW	1	20	1.1	1.9	1.5
Cryptotaenia canadensis	2	FAC	1	10	1.1	1	1
Schoenoplectus fluviatilis	4	OBL	1	10	1.1	1	1
Leersia oryzoides	4	OBL	1	7	1.1	0.7	0.9
Oxalis stricta	0	FACU	3	7	3.3	0.7	2
Persicaria hydropiper	2	OBL	2	7	2.2	0.7	1.4
Eupatorium serotinum	0	FAC	2	7	2.2	0.7	1.4
Bidens frondosa	1	FACW	1	5	1.1	0.5	0.8
Fraxinus pennsylvanica	1	FACW	1	5	1.1	0.5	0.8
Cirsium arvense	0	FACU	2	3	2.2	0.3	1.3
Vitis riparia	2	FACW	1	3	1.1	0.3	0.7
Ambrosia trifida	0	FAC	1	3	1.1	0.3	0.7
Carex scoparia	7	FACW	1	3	1.1	0.3	0.7
Acer saccharinum	0	FACW	1	3	1.1	0.3	0.7
Hackelia virginiana	0	FACU	1	2	1.1	0.2	0.7

Rumex crispus	0	FAC	2	2	2.2	0.2	1.2
Apocynum cannabinum	2	FAC	1	2	1.1	0.2	0.7
Trifolium pratense	0	FACU	1	2	1.1	0.2	0.7
Urtica dioica ssp. gracilis	2	FACW	1	2	1.1	0.2	0.7
Echinochloa crus-galli	0	FACW	1	2	1.1	0.2	0.7
Persicaria pensylvanica	0	FACW	1	2	1.1	0.2	0.7
Setaria pumila	0	FAC	1	1	1.1	0.1	0.6
Symphyotrichum puniceum	7	OBL	1	1	1.1	0.1	0.6
Geum canadense	1	FAC	1	1	1.1	0.1	0.6
Daucus carota	0	UPL	1	1	1.1	0.1	0.6
Taraxacum officinale	0	FACU	1	1	1.1	0.1	0.6
Acalypha rhomboidea	0	FACU	1	1	1.1	0.1	0.6
			90	1045			

TRANSECT INVENTORY

Acronym	Scientific Name (NWPL/Mohlenbrock)	Scientific Name Synonym (Swink & Wilhelm)	Common Name (NWPL/Mohlenbrock)	C	WETNESS	WETNESS VALUE
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	1
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	-1
AMBTRI	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	0
APOCAN	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	0
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	-1
CONSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	0
CXGRIS	Carex grisea	Carex grisea	Inflated Narrow-Leaf Sedge	2	FAC	0
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	7	FACW	-1
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	1
CRYCAN	Cryptotaenia canadensis	Cryptotaenia canadensis	Canadian Honewort	2	FAC	0
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	2
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	-1
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	-1
EUPSER	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	0
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	-1
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	0
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	1
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	0	FACU	1
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	4	OBL	-2
LEEVIR	Leersia virginica	Leersia virginica	White Grass	7	FACW	-1
LYSNUM	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	-1
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	1
POLAMP	Persicaria amphibia	Polygonum coccineum; Polygonum amphibium stipulaceum	Water Smartweed	4	OBL	-2
POLHYD	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	-2
POLPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	-1
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	-1
PILPUM	Pilea pumila	Pilea pumila	Canadian Clearweed	5	FACW	-1

RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	5	FACW	-1
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	1
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	0
SCIFLU	Schoenoplectus fluviatilis	Scirpus fluviatilis	River Club-Rush	4	OBL	-2
SETGLA	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	0
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	-1
ASTSIM	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	0
ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	-1
ASTPUN	Symphyotrichum puniceum	Aster puniceus; Aster puniceus firmus	Purple-Stem American-Aster	7	OBL	-2
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	1
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	1
URTDIO	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	-1
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	0
VITRIP	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	-1

TRANSECT STRING

>

QUAD	1
SPECIES	COVER
RUDSUB	75

>

QUAD	2
SPECIES	COVER
ASTLAT	3
ASTSIM	30
CXGRIS	3
ELYVIR	5
GLEHED	5
LEEORY	7
PILPUM	1
POLAMP	3

>

QUAD	3
SPECIES	COVER
ASTSIM	6
BIDFRO	5
CIRARV	1
CRYCAN	10
CXGRIS	6
FRAPEN	5
GLEHED	30
HACVIR	2
OXASTR	2
PILPUM	5
POLAMP	2
RUDLAC	20

RUDSUB	5
VIOSOR	1
VITRIP	3
>	
QUAD	4
SPECIES	COVER
ASTLAT	5
ASTSIM	10
CXGRIS	15
ELYVIR	15
GLEHED	30
PHAARU	5
POLAMP	7
RUDSUB	5
>	
QUAD	5
SPECIES	COVER
ASTLAT	30
ASTSIM	5
GLEHED	2
LYSNUM	45
POLAMP	7
POLHYD	2
RUDSUB	5
RUMCRI	1
SETGLA	1
>	
QUAD	6
SPECIES	COVER
ASTLAT	5
ASTSIM	15
CXGRIS	3
LEEVIR	20
LYSNUM	10
POLAMP	1
POLHYD	5
SCIFLU	10
>	
QUAD	7
SPECIES	COVER
ASTPUN	1
ASTSIM	25
CONSEP	25
EUPSER	5
GLEHED	25
SOLCAN	30
SOLGIG	30
>	
QUAD	8
SPECIES	COVER

ASTSIM	55
CONSEP	3
GEUCAN	1
OXASTR	3
SOLCAN	5
>	
QUAD	9
SPECIES	COVER
AMBTRI	3
APOCAN	2
ASTSIM	20
CXSCOP	3
DAUCAR	1
EUPSER	2
GLEHED	80
RUDLAC	3
SOLCAN	2
SOLGIG	2
TAROFF	1
TRIPRA	2
URTDIO	2
>	
QUAD	10
SPECIES	COVER
ACARHO	1
ACESAI	3
ASTSIM	20
CIRARV	2
ECHCRU	2
OXASTR	2
PILPUM	2
RUMCRI	1
SOLCAN	25
>	
QUAD	11
SPECIES	COVER
RUDLAC	35
>	
QUAD	12
SPECIES	COVER
PILPUM	60
>	
QUAD	13
SPECIES	COVER
ASTSIM	25
>	
QUAD	14
SPECIES	COVER
CONSEP	5
>	

QUAD	15
SPECIES	COVER
PHAARU	15
>	
QUAD	16
SPECIES	COVER
POLPEN	2
>	
QUAD	17
SPECIES	COVER
VIOSOR	20
>	

SITE: WCERT
LOCALE: Reach 8B
BY: Mark O'Leary, William Stoll, Cecily Cunz, Kasey Clark
NOTES: 2016 Fall Vegetation Transects 1-8- 8/30/2016

TRANSECT QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS
T01-01	1.6	1.6	3.58	3.58	-1	-1	5	5
T01-02	2.63	2.63	7.42	7.42	-0.88	-0.88	8	8
T01-03	3.25	3.25	9.19	9.19	-0.88	-0.88	8	8
T01-04	2.75	2.2	5.5	5.39	-0.5	-0.4	4	6
T01-05	1.2	1.2	2.68	2.68	-0.8	-0.8	5	5
T01-06	3	2.63	7.94	7.42	-1.14	-1	7	8
T01-07	1.2	1.2	2.68	2.68	-0.8	-0.8	5	5
T01-08	2.5	2.5	5	5	-1.25	-1.25	4	4
T01-09	1.86	1.63	4.91	4.6	-0.57	-0.38	7	8
T01-10	1.57	1.38	4.16	3.89	0.14	0.25	7	8
T01-11	1.33	1.33	3.27	3.27	0	0	6	6
T02-01	2	2	4.47	4.47	-1	-1	5	5
T02-02	1.67	1.25	2.89	2.5	0	-0.25	3	4
T02-03	2.6	2.6	5.81	5.81	0.4	0.4	5	5
T02-04	3.2	3.2	7.16	7.16	0	0	5	5
T02-05	2.67	2.67	4.62	4.62	0	0	3	3
T03-01	2.78	1.56	8.33	6.25	0.78	0.81	9	16
T03-02	3.55	2.79	11.76	10.42	0.45	0.5	11	14
T03-03	2.33	1.17	4.04	2.86	0.33	0.33	3	6
T03-04	3.8	1.9	8.5	6.01	0.4	0.5	5	10
T03-05	3.38	3.38	9.55	9.55	0.75	0.75	8	8
T03-06	3.6	2.25	8.05	6.36	1	1	5	8
T03-07	2.25	1	4.5	3	0	0	4	9
T03-08	3.6	2.57	8.05	6.8	1	1	5	7
T03-09	3.6	1.8	8.05	5.69	0.8	0.9	5	10
T03-10	3.14	2.2	8.32	6.96	0.29	0.3	7	10
T03-11	3.5	3.5	8.57	8.57	0.17	0.17	6	6
T03-12	1.33	0.89	3.27	2.67	0.17	0.56	6	9
T03-13	0.2	0.17	0.45	0.41	-0.6	-0.5	5	6
T03-14	3	1.5	6	4.24	-0.5	0	4	8
T03-15	5	2.5	11.18	7.91	0.8	1	5	10
T03-16	3.5	2.8	7	6.26	1	0.8	4	5
T03-17	4.5	2.25	9	6.36	1.25	1.25	4	8
T03-18	4	0.5	4	1.41	-1	0.75	1	8
T03-19	0.75	0.33	1.5	1	-0.5	0.11	4	9
T03-20	4.33	1.86	7.51	4.91	1	0.86	3	7
T03-21	2.5	1.67	5	4.08	0	0.17	4	6
T03-22	2.83	1.55	6.94	5.13	0.67	0.55	6	11
T03-23	1.5	1.13	3.67	3.18	0.67	0.75	6	8

T03-24	4	1	4	2	-1	-0.75	1	4
T03-25	3.2	2.29	7.16	6.05	-0.4	0	5	7
T03-26	4.4	3.14	9.84	8.32	1	1	5	7
T03-27	2.25	1	4.5	3	1	0.78	4	9
T03-28	0.71	0.56	1.89	1.67	0.71	0.56	7	9
T03-29	2	1.11	4.47	3.33	0	0.44	5	9
T03-30	2.5	0.83	3.54	2.04	1	1.17	2	6
T03-31	2.14	1.36	5.67	4.52	1	0.91	7	11
T03-32	3.5	2	7	5.29	1	0.86	4	7
T03-33	1.89	1.55	5.67	5.13	0.22	0.27	9	11
T03-34	1.5	0.5	2.12	1.22	-1.5	-0.17	2	6
T03-35	2.5	1.25	3.54	2.5	1	1.25	2	4
T04-01	4.67	2.33	8.08	5.72	0.33	0.67	3	6
T04-02	4.8	4	10.73	9.8	0.8	0.67	5	6
T04-03	2.8	1.75	6.26	4.95	0	0.38	5	8
T04-04	2	0.8	2.83	1.79	0	0.2	2	5
T04-05	2.67	2.18	8	7.24	0.56	0.55	9	11
T04-06	2.14	1.5	5.67	4.74	0.43	0.7	7	10
T04-07	3.25	1.86	6.5	4.91	1	0.71	4	7
T04-08	5.33	5.33	9.24	9.24	0.67	0.67	3	3
T04-09	4.4	4.4	9.84	9.84	0.4	0.4	5	5
T04-10	3.86	3.38	10.21	9.55	0.29	0.38	7	8
T04-11	2.75	2.44	7.78	7.33	0.63	0.56	8	9
T04-12	3.25	2.6	9.19	8.22	-0.38	0	8	10
T04-13	4	4	5.66	5.66	0	0	2	2
T04-14	4	2	4	2.83	1	0	1	2
T04-15	1.33	0.67	2.31	1.63	0.33	0.33	3	6
T04-16	4.33	2.6	7.51	5.81	0.67	0.8	3	5
T04-17	0	0	0	0	0.5	0.33	2	6
T04-18	1.29	0.82	3.4	2.71	0.14	0.55	7	11
T04-19	2	1.43	4.47	3.78	1	0.71	5	7
T04-20	1.86	1.3	4.91	4.11	0.71	0.9	7	10
T04-21	3.5	2	7	5.29	1.25	1	4	7
T04-22	3.5	2.33	7	5.72	0.75	0.83	4	6
T04-23	1.2	0.6	2.68	1.9	0.8	0.6	5	10
T04-24	3	1.29	5.2	3.4	0.33	0.86	3	7
T04-25	2.67	1.14	4.62	3.02	1	0.71	3	7
T04-26	2.5	1.25	3.54	2.5	1	1	2	4
T04-27	2.5	1.25	3.54	2.5	1	1	2	4
T04-28	2.5	1.67	3.54	2.89	1	1	2	3
T04-29	4.67	3.5	8.08	7	1	1	3	4
T04-30	4	2	4	2.83	1	1	1	2
T04-31	2.5	1.67	3.54	2.89	1	1	2	3
T05-01	3.71	3.25	9.83	9.19	-0.43	-0.25	7	8
T05-02	4.88	3.9	13.79	12.33	-0.63	-0.3	8	10
T05-03	3.4	2.83	7.6	6.94	-0.2	0	5	6
T05-04	4	2.67	8	6.53	-1	-0.33	4	6
T05-05	2.67	1.6	6.53	5.06	-0.17	0.2	6	10
T05-06	3.38	2.45	9.55	8.14	-0.75	-0.55	8	11
T06-01	0	0	0	0	1	0.75	2	4

T06-02	3.67	3.67	8.98	8.98	-1.17	-1.17	6	6
T06-03	2.83	2.83	6.94	6.94	-0.17	-0.17	6	6
T06-04	2.8	2.8	6.26	6.26	0.2	0.2	5	5
T06-05	2.67	2.4	8	7.59	0.11	0.3	9	10
T06-06	2.8	1.75	6.26	4.95	0.6	0.5	5	8
T07-01	2.5	2	7.07	6.32	0.5	0.7	8	10
T07-02	2.5	1.88	6.12	5.3	-0.5	-0.13	6	8
T07-03	3.57	2.27	9.45	7.54	-0.14	0.27	7	11
T07-04	3.25	2.17	6.5	5.31	-1.25	-0.5	4	6
T07-05	2.54	2.54	9.15	9.15	0.15	0.15	13	13
T07-06	2.57	2.57	6.8	6.8	0	0	7	7
T07-07	2.89	2.6	8.67	8.22	0.22	0.3	9	10
T07-08	3.07	2.71	11.88	11.16	-0.87	-0.71	15	17
T07-09	2.56	2.56	7.67	7.67	-0.56	-0.56	9	9
T07-10	1.71	1.2	4.54	3.79	0.57	0.5	7	10
T07-11	2.5	1.92	7.91	6.93	-0.1	0.15	10	13
T07-12	3	3	6.71	6.71	-0.4	-0.4	5	5
T07-13	3.25	2.6	6.5	5.81	-1.25	-0.6	4	5
T07-4	10	10	10	10	2	2	1	1
T08-01	3.14	1.83	8.32	6.35	0.14	0.17	7	12
T08-02	2.29	1.6	6.05	5.06	0.29	0.4	7	10
T08-03	2.9	2.23	9.17	8.04	0	0	10	13
T08-04	3.1	2.38	9.8	8.6	-0.3	-0.31	10	13
T08-05	2.5	1.82	7.07	6.03	-0.38	-0.09	8	11
T08-06	2.3	2.09	7.27	6.93	-0.2	-0.27	10	11
T08-07	2.57	2.25	6.8	6.36	0	-0.13	7	8
T08-08	3.33	3.33	10	10	0.22	0.22	9	9
T8-3-01	3	1.88	6.71	5.3	1	1.13	5	8
T8-3-02	3.91	3.31	12.96	11.93	-0.64	-0.54	11	13
AVG	2.88	2.1	6.42	5.53	0.17	0.27	5.48	7.62
STD	1.23	1.2	2.72	2.65	0.71	0.62	2.64	2.98

TRANSECT SUMMARY

C	NUMBER				
0	20			108	NATIVE SPECIES
1	12			158	TOTAL SPECIES
2	15			3.38	NATIVE MEAN C
3	6			2.31	W/Adventives
4	20	0:	18.35%	35.12	NATIVE FQI
5	19	1 to 3:	30.28%	29.04	W/Adventives
6	4	4 to 7:	44.04%	-0.05	NATIVE MEAN W
7	5	8 to 10:	7.34%	0.2	W/Adventives
8	3				
9	3				
10	2				

PHYSIOGNOMIC SUMMARY

PHYSIOGNOMY

NATIVE	108	68.35%	ADVENTIVE	50	31.65%
Tree	5	3.16%	Tree	3	1.90%
Shrub	5	3.16%	Shrub	4	2.53%
Vine	3	1.90%	Vine	1	0.63%
Forb	73	46.20%	Forb	25	15.82%
Grass	15	9.49%	Grass	16	10.13%
Sedge	8	5.06%	Sedge	0	0.00%
Fern	0	0.00%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOG	FRQ	COV	RFRQ	RCOV	RIV
N Tree	11	44	1.2	0.4	0.8
N Shrub	7	110	0.8	1	0.9
N Vine	13	48	1.4	0.4	0.9
N Forb	440	5849	49	52.6	50.8
N Grass	139	2168	15.5	19.5	17.5
N Sedge	37	426	4.1	3.8	4
A Tree	5	36	0.6	0.3	0.4
A Shrub	12	88	1.3	0.8	1.1
A Vine	1	3	0.1	.	0.1
A Forb	122	922	13.6	8.3	10.9
A Grass	111	1432	12.4	12.9	12.6

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME (NWPL/MOHLENBROCK)	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Solidago canadensis	1	FACU	48	1185	5.3	10.6	8
Symphyotrichum lanceolatum	3	FAC	17	754	1.9	6.8	4.3
Elymus virginicus	4	FACW	30	633	3.3	5.7	4.5
Elymus canadensis	4	FACU	32	630	3.6	5.7	4.6
Monarda fistulosa	4	FACU	33	422	3.7	3.8	3.7
Sorghastrum nutans	5	FACU	17	359	1.9	3.2	2.6
Poa pratensis	0	FAC	21	350	2.3	3.1	2.7
Euthamia graminifolia	4	FACW	10	275	1.1	2.5	1.8
Poa compressa	0	FACU	10	268	1.1	2.4	1.8
Setaria faberi	0	FACU	23	246	2.6	2.2	2.4
Helenium autumnale	5	FACW	8	244	0.9	2.2	1.5
Rumex crispus	5	FACW	18	239	2	2.1	2.1
Pilea pumila	5	FACW	18	239	2	2.1	2.1
Melilotus officinalis	0	FACU	9	233	1	2.1	1.5
Symphyotrichum lateriflorum	4	FACW	14	231	1.6	2.1	1.8
Melilotus albus	0	UPL	11	197	1.2	1.8	1.5
Cyperus esculentus	0	FACW	12	176	1.3	1.6	1.5

Persicaria hydropiper	2	OBL	16	171	1.8	1.5	1.7
Andropogon gerardii	5	FAC	13	169	1.4	1.5	1.5
Ambrosia artemisiifolia	0	FACU	16	164	1.8	1.5	1.6
Symphyotrichum pilosum	0	FACU	19	150	2.1	1.3	1.7
Agrostis gigantea	0	FACW	9	139	1	1.2	1.1
Ambrosia trifida	0	FAC	13	130	1.4	1.2	1.3
Eupatorium serotinum	0	FAC	12	130	1.3	1.2	1.3
Schizachyrium scoparium	5	FACU	8	128	0.9	1.2	1
Ratibida pinnata	4	UPL	14	126	1.6	1.1	1.3
Viola sororia	3	FAC	8	123	0.9	1.1	1
Persicaria pensylvanica	0	FACW	9	118	1	1.1	1
Solidago gigantea	4	FACW	8	107	0.9	1	0.9
Bidens frondosa	1	FACW	9	97	1	0.9	0.9
Daucus carota	0	UPL	23	92	2.6	0.8	1.7
Setaria verticillata	0	FAC	8	91	0.9	0.8	0.9
Rudbeckia subtomentosa	9	FACU	3	90	0.3	0.8	0.6
Paspalum laeve	0	FACW	5	85	0.6	0.8	0.7
Paspalum setaceum	4	FACU	5	85	0.6	0.8	0.7
Carex stipata	3	OBL	3	85	0.3	0.8	0.5
Rudbeckia triloba	3	FACU	4	79	0.4	0.7	0.6
Sambucus nigra ssp. canadensis	1	FACW	2	76	0.2	0.7	0.5
Elymus repens	0	FACU	3	74	0.3	0.7	0.5
Geum canadense	1	FAC	13	74	1.4	0.7	1.1
Rhamnus cathartica	0	FAC	8	69	0.9	0.6	0.8
Phalaris arundinacea	0	FACW	11	68	1.2	0.6	0.9
Helianthus divaricatus	5	UPL	2	65	0.2	0.6	0.4
Eupatorium altissimum	0	UPL	9	65	1	0.6	0.8
Cirsium arvense	0	FACU	16	64	1.8	0.6	1.2
Glechoma hederacea	0	FACU	6	63	0.7	0.6	0.6
Trifolium pratense	0	FACU	13	63	1.4	0.6	1
Carex vulpinoidea	2	FACW	5	63	0.6	0.6	0.6
Pycnanthemum virginianum	5	FACW	5	61	0.6	0.5	0.6
Erigeron annuus	0	FACU	9	59	1	0.5	0.8
Setaria viridis	0	UPL	4	57	0.4	0.5	0.5
Bidens cernua	5	OBL	4	51	0.4	0.5	0.5
Lycopus americanus	5	OBL	9	50	1	0.4	0.7
Prunella vulgaris ssp. vulgaris	0	FAC	3	47	0.3	0.4	0.4
Carex blanda	1	FAC	9	45	1	0.4	0.7
Prunella vulgaris ssp. lanceolata	0	FAC	3	45	0.3	0.4	0.4
Verbesina alternifolia	5	FACW	7	43	0.8	0.4	0.6
Carex gravida	4	FACU	4	42	0.4	0.4	0.4
Echinochloa crus-galli	0	FACW	9	38	1	0.3	0.7
Panicum capillare	1	FAC	9	38	1	0.3	0.7
Symphyotrichum puniceum	7	OBL	7	38	0.8	0.3	0.6
Leersia oryzoides	4	OBL	4	36	0.4	0.3	0.4
Symphyotrichum laeve	9	FACU	5	36	0.6	0.3	0.4
Plantago major	0	FAC	6	31	0.7	0.3	0.5
Physostegia virginiana	6	FACW	1	30	0.1	0.3	0.2
Euthamia gymnospermoides	5	FACW	2	30	0.2	0.3	0.2
Rudbeckia hirta	1	FACU	10	29	1.1	0.3	0.7

Populus deltoides	2	FAC	6	27	0.7	0.2	0.5
Juncus dudleyi	4	FACW	3	26	0.3	0.2	0.3
Persicaria virginiana	2	FAC	5	26	0.6	0.2	0.4
Setaria pumila	0	FAC	7	24	0.8	0.2	0.5
Vitis riparia	2	FACW	7	24	0.8	0.2	0.5
Urtica dioica ssp. gracilis	2	FACW	4	22	0.4	0.2	0.3
Leersia virginica	7	FACW	2	20	0.2	0.2	0.2
Morus alba	0	FAC	3	18	0.3	0.2	0.2
Sonchus oleraceus	0	FACU	2	18	0.2	0.2	0.2
Coreopsis tripteris	5	FAC	2	18	0.2	0.2	0.2
Plantago rugelii	0	FAC	4	17	0.4	0.2	0.3
Galium aparine	1	FACU	5	17	0.6	0.2	0.4
Acalypha rhomboidea	0	FACU	4	16	0.4	0.1	0.3
Bouteloua curtipendula	8	UPL	4	16	0.4	0.1	0.3
Robinia pseudoacacia	0	FACU	1	15	0.1	0.1	0.1
Symphyotrichum ericoides	5	FACU	1	15	0.1	0.1	0.1
Eutrochium maculatum	4	OBL	1	15	0.1	0.1	0.1
Hackelia virginiana	0	FACU	2	15	0.2	0.1	0.2
Lactuca serriola	0	FACU	1	15	0.1	0.1	0.1
Toxicodendron radicans	2	FAC	3	14	0.3	0.1	0.2
Verbena urticifolia	5	FAC	4	13	0.4	0.1	0.3
Verbena stricta	4	UPL	3	13	0.3	0.1	0.2
Rudbeckia laciniata	5	FACW	2	13	0.2	0.1	0.2
Silphium laciniatum	5	UPL	1	12	0.1	0.1	0.1
Trifolium repens	0	FACU	4	12	0.4	0.1	0.3
Erigeron canadensis	0	FACU	2	12	0.2	0.1	0.2
Taraxacum officinale	0	FACU	6	11	0.7	0.1	0.4
Zanthoxylum americanum	3	FACU	1	10	0.1	0.1	0.1
Cornus racemosa	1	FAC	1	10	0.1	0.1	0.1
Ptelea trifoliata	7	FACU	1	10	0.1	0.1	0.1
Trifolium hybridum	0	FACU	2	10	0.2	0.1	0.2
Parthenocissus quinquefolia	2	FACU	3	10	0.3	0.1	0.2
Symphyotrichum drummondii	2	UPL	2	9	0.2	0.1	0.2
Hordeum jubatum	0	FAC	3	9	0.3	0.1	0.2
Fraxinus pennsylvanica	1	FACW	2	9	0.2	0.1	0.2
Elaeagnus angustifolia	0	FACU	1	8	0.1	0.1	0.1
Elaeagnus umbellata	0	UPL	1	8	0.1	0.1	0.1
Digitaria ischaemum	0	FACU	1	8	0.1	0.1	0.1
Polygonum aviculare	0	FAC	3	8	0.3	0.1	0.2
Persicaria maculosa	0	FACW	2	8	0.2	0.1	0.1
Ageratina altissima	4	FACU	2	8	0.2	0.1	0.1
Verbena hastata	4	FACW	2	8	0.2	0.1	0.1
Carex scoparia	7	FACW	2	7	0.2	0.1	0.1
Solidago rigida	4	FACU	2	7	0.2	0.1	0.1
Symphyotrichum shortii	8	UPL	4	7	0.4	0.1	0.3
Amaranthus retroflexus	0	FACU	1	7	0.1	0.1	0.1
Impatiens capensis	3	FACW	2	7	0.2	0.1	0.1
Platanthera lacera	10	FACW	1	6	0.1	0.1	0.1
Asclepias syriaca	0	FACU	2	6	0.2	0.1	0.1
Panicum virgatum	5	FAC	2	6	0.2	0.1	0.1

Quercus bicolor	6	FACW	1	5	0.1	.	0.1
Cicuta maculata	6	OBL	1	5	0.1	.	0.1
Apocynum cannabinum	2	FAC	2	5	0.2	.	0.1
Plantago lanceolata	0	FACU	1	5	0.1	.	0.1
Bromus tectorum	0	UPL	1	5	0.1	.	0.1
Cinna arundinacea	5	FACW	2	5	0.2	.	0.1
Carex communis	8	UPL	1	5	0.1	.	0.1
Boehmeria cylindrica	2	OBL	1	5	0.1	.	0.1
Oxalis stricta	0	FACU	3	5	0.3	.	0.2
Lysimachia nummularia	0	FACW	1	5	0.1	.	0.1
Leonurus cardiaca	0	UPL	1	5	0.1	.	0.1
Sinapis arvensis	0	UPL	1	4	0.1	.	0.1
Panicum dichotomiflorum	0	FACW	1	4	0.1	.	0.1
Avena sativa	0	UPL	3	4	0.3	.	0.2
Typha latifolia	1	OBL	1	4	0.1	.	0.1
Rubus occidentalis	2	UPL	2	4	0.2	.	0.1
Lonicera tatarica	0	FACU	2	3	0.2	.	0.1
Solanum dulcamara	0	FAC	1	3	0.1	.	0.1
Chamaesyce maculata	0	FACU	1	3	0.1	.	0.1
Agalinis purpurea	6	FACW	1	3	0.1	.	0.1
Cichorium intybus	0	FACU	2	3	0.2	.	0.1
Scirpus atrovirens	4	OBL	1	3	0.1	.	0.1
Cryptotaenia canadensis	2	FAC	1	3	0.1	.	0.1
Ulmus pumila	0	UPL	1	3	0.1	.	0.1
Cirsium discolor	2	FACU	1	3	0.1	.	0.1
	0	FAC	1	2	0.1	.	0.1
Acer saccharinum	0	FACW	1	2	0.1	.	0.1
Symphyotrichum novae-angliae	4	FACW	2	2	0.2	.	0.1
Bromus inermis	0	FACU	1	2	0.1	.	0.1
Asclepias incarnata	4	OBL	1	2	0.1	.	0.1
Lolium perenne ssp. multiflorum	0	FACU	1	2	0.1	.	0.1
Alliaria petiolata	0	FAC	1	2	0.1	.	0.1
Silene latifolia	0	UPL	1	2	0.1	.	0.1
Potentilla indica	0	FACU	1	2	0.1	.	0.1
Lactuca canadensis	2	FACU	1	1	0.1	.	0.1
Medicago lupulina	0	FACU	1	1	0.1	.	0.1
Spartina pectinata	4	FACW	1	1	0.1	.	0.1
Lycopus virginicus	9	OBL	1	1	0.1	.	0.1
Baptisia bracteata	10	UPL	1	1	0.1	.	0.1
Carya cordiformis	7	FACU	1	1	0.1	.	0.1
Circaea canadensis	1	FACU	1	1	0.1	.	0.1
			899	11128			

TRANSECT INVENTORY

Acronym	Scientific Name (NWPL/Mohlenbrock)	Scientific Name Synonym (Swink & Wilhelm)	Common Name (NWPL/Mohlenbrock)	C	WETNESS	WETNESS VALUE
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	1
ACESAI	Acer saccharinum	Acer saccharinum	Silver Maple	0	FACW	-1

AGAPUR	Agalinis purpurea	Agalinis purpurea	Purple False Foxglove	6	FACW	-1
EUPRUG	Ageratina altissima	Eupatorium rugosum	White Snakeroot	4	FACU	1
AGRALB	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	-1
ALLPET	Alliaria petiolata	ALLIARIA PETIOLATA	Garlic-Mustard	0	FAC	0
AMARET	Amaranthus retroflexus	AMARANTHUS RETROFLEXUS	Red-Root	0	FACU	1
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	1
AMBTRI	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	0
ANDGER	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	0
APOSIB	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	0
ASCINC	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	-2
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	1
AVESAT	Avena sativa	AVENA SATIVA	Oats	0	UPL	2
BAPBRA	Baptisia bracteata	Baptisia leucophaea	Cream Wild Indigo	1 0	UPL	2
BIDCER	Bidens cernua	Bidens cernua	Nodding Burr-Marigold	5	OBL	-2
BIDFRO	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	-1
BOECYL	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	2	OBL	-2
BOUCUR	Bouteloua curtipendula	Bouteloua curtipendula	Side-Oats Grama	8	UPL	2
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	1
BROTEC	Bromus tectorum	BROMUS TECTORUM	Downy Chess	0	UPL	2
CXBLAN	Carex blanda	Carex blanda	Eastern Woodland Sedge	1	FAC	0
CXCOMM	Carex communis	Carex communis	Common Beech Sedge	8	UPL	2
CXGRAV	Carex gravida	Carex gravida	Heavy Sedge	4	FACU	1
CXSCOP	Carex scoparia	Carex scoparia	Pointed Broom Sedge	7	FACW	-1
CXSTIP	Carex stipata	Carex stipata	Stalk-Grain Sedge	3	OBL	-2
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	-1
CARCOR	Carya cordiformis	Carya cordiformis	Bitter-Nut Hickory	7	FACU	1
EUPMAA	Chamaesyce maculata	Euphorbia maculata; Euphorbia supina	Spotted Sandmat	0	FACU	1
CICINT	Cichorium intybus	CICHORIUM INTYBUS	Chicory	0	FACU	1
CICMAC	Cicuta maculata	Cicuta maculata	Spotted Water-Hemlock	6	OBL	-2
CINARU	Cinna arundinacea	Cinna arundinacea	Sweet Wood-Reed	5	FACW	-1
CIRLUT	Circaea canadensis	Circaea lutetiana canadensis	Broad-Leaf Enchanter's-Nightshade	1	FACU	1
CIRARV	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	1
CIRDIS	Cirsium discolor	Cirsium discolor	Field Thistle	2	FACU	1
CORTRI	Coreopsis tripteris	Coreopsis tripteris	Tall Tickseed	5	FAC	0
CORRAC	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	0
CRYCAN	Cryptotaenia canadensis	Cryptotaenia canadensis	Canadian Honewort	2	FAC	0
CYPESC	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	-1
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	2
DIGISC	Digitaria ischaemum	DIGITARIA ISCHAEMUM	Smooth Crab Grass	0	FACU	1
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	-1
ELAANG	Elaeagnus angustifolia	ELAEAGNUS ANGUSTIFOLIA	Russian-Olive	0	FACU	1
ELAUMB	Elaeagnus umbellata	ELAEAGNUS UMBELLATA	Autumn-Olive	0	UPL	2
ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	1
AGRREP	Elymus repens	AGROPYRON REPENS	Creeping Wild Rye	0	FACU	1
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	-1
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	1
ERICAN	Erigeron canadensis	Erigeron canadensis	Canadian Horseweed	0	FACU	1
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	2
EUPSER	Eupatorium serotinum	Eupatorium serotinum	Late-Flowering Thoroughwort	0	FAC	0

SOLGRA	Euthamia graminifolia	Solidago graminifolia; Solidago graminifolia nuttallii	Flat-Top Goldentop	4	FACW	-1
EUTGYM	Euthamia gymnospermoides	Solidago gymnospermoides	Texas Goldentop	5	FACW	-1
EUPMAC	Eutrochium maculatum	Eupatorium maculatum	Spotted Trumpetweed	4	OBL	-2
FRAPEN	Fraxinus pennsylvanica	Fraxinus pennsylvanica subintegerrima	Green Ash	1	FACW	-1
GALAPA	Galium aparine	Galium aparine	Sticky-Willy	1	FACU	1
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	0
GLEHED	Glechoma hederacea	GLECHOMA HEDERACEA	Groundivy	0	FACU	1
HACVIR	Hackelia virginiana	Hackelia virginiana	Beggar's-Lice	0	FACU	1
HELAUT	Helenium autumnale	Helenium autumnale	Fall Sneezeweed	5	FACW	-1
HELDIV	Helianthus divaricatus	Helianthus divaricatus	Woodland Sunflower	5	UPL	2
HORJUB	Hordeum jubatum	HORDEUM JUBATUM	Fox-Tail Barley	0	FAC	0
IMPCAP	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	-1
JUNDUD	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4	FACW	-1
LACCAN	Lactuca canadensis	Lactuca canadensis	Canadian Blue Lettuce	2	FACU	1
LACSER	Lactuca serriola	LACTUCA SERRIOLA	Prickly Lettuce	0	FACU	1
LEEORY	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	4	OBL	-2
LEEVIR	Leersia virginica	Leersia virginica	White Grass	7	FACW	-1
LEOCAR	Leonurus cardiaca	LEONURUS CARDIACA	Motherwort	0	UPL	2
LOLMUL	Lolium perenne ssp. multiflorum	LOLIUM MULTIFLORUM	Perennial Rye Grass	0	FACU	1
LONTAT	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	1
LYCAME	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	5	OBL	-2
LYCVIR	Lycopus virginicus	Lycopus virginicus	Virginia Water-Horehound	9	OBL	-2
LYSNUM	Lysimachia nummularia	LYSIMACHIA NUMMULARIA	Creeping-Jenny	0	FACW	-1
MEDLUP	Medicago lupulina	MEDICAGO LUPULINA	Black Medick	0	FACU	1
MELALB	Melilotus albus	MELILOTUS ALBA	White Sweet-Clover	0	UPL	2
MELLOF	Melilotus officinalis	MELILOTUS ALBA	Yellow Sweet-Clover	0	FACU	1
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	1
MORALB	Morus alba	MORUS ALBA	White Mulberry	0	FAC	0
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	1
PANCAP	Panicum capillare	Panicum capillare	Common Panic Grass	1	FAC	0
PANDIC	Panicum dichotomiflorum	Panicum dichotomiflorum	Fall Panic Grass	0	FACW	-1
PANVIR	Panicum virgatum	Panicum virgatum	Wand Panic Grass	5	FAC	0
PARQUI	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2	FACU	1
PASLAE	Paspalum laeve	PASPALUM LAEVE	Field Crown Grass	0	FACW	-1
PASSET	Paspalum setaceum	Paspalum ciliatifolium muhlenbergii; Paspalum ciliatifolium stramineum	Slender Crown Grass	4	FACU	1
POLHYD	Persicaria hydropiper	Polygonum hydropiper	Mild Water-Pepper	2	OBL	-2
POLPER	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0	FACW	-1
POLPEN	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	-1
POLVIR	Persicaria virginiana	Polygonum virginianum	Jumpseed	2	FAC	0
PHAARU	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0	FACW	-1
PHYVIR	Physostegia virginiana	Physostegia virginiana	Obedient-Plant	6	FACW	-1
PILPUM	Pilea pumila	Pilea pumila	Canadian Clearweed	5	FACW	-1
PILPUM	Pilea pumila	Pilea pumila	Canadian Clearweed	5	FACW	-1
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	1
PLAMAJ	Plantago major	PLANTAGO MAJOR	Great Plantain	0	FAC	0
PLARUG	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	0
PLALAC	Platanthera lacera	Habenaria lacera	Green Fringed Orchid	10	FACW	-1

POACOM	Poa compressa	POA COMPRESSA	Flat-Stem Blue Grass	0	FACU	1
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	0
POLAVI	Polygonum aviculare	POLYGONUM AVICULARE	Yard Knotweed	0	FAC	0
POPDEL	Populus deltoides	Populus deltoides	Eastern Cottonwood	2	FAC	0
DUCIND	Potentilla indica	DUCHESNEA INDICA	Indian-Strawberry	0	FACU	1
PRUVLA	Prunella vulgaris ssp. lanceolata	Prunella vulgaris lanceolata	Common Selfheal	0	FAC	0
PRUVUV	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0	FAC	0
PTETRI	Ptelea trifoliata	Ptelea trifoliata	Common Hoptree	7	FACU	1
PYCVIR	Pycnanthemum virginianum	Pycnanthemum virginianum	Virginia Mountain-Mint	5	FACW	-1
QUEBIC	Quercus bicolor	Quercus bicolor	Swamp White Oak	6	FACW	-1
RATPIN	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4	UPL	2
RHACAT	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	0
ROBPSE	Robinia pseudoacacia	ROBINIA PSEUDOACACIA	Black Locust	0	FACU	1
RUBOCC	Rubus occidentalis	Rubus occidentalis	Black Raspberry	2	UPL	2
RUDHIR	Rudbeckia hirta	Rudbeckia hirta	Black-Eyed-Susan	1	FACU	1
RUDLAC	Rudbeckia laciniata	Rudbeckia laciniata	Green-Head Coneflower	5	FACW	-1
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	1
RUDTRI	Rudbeckia triloba	Rudbeckia triloba	Brown-Eyed-Susan	3	FACU	1
RUMCRI	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	0
SAMCAN	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	1	FACW	-1
ANDSCO	Schizachyrium scoparium	Andropogon scoparius	Little False Bluestem	5	FACU	1
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	-2
SETFAB	Setaria faberi	SETARIA FABERI	Japanese Bristle Grass	0	FACU	1
SETGLA	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	0
SETVER	Setaria verticillata	SETARIA VERTICILLATA	Rough Bristle Grass	0	FAC	0
SETVIR	Setaria viridis	SETARIA VIRIDIS	Green Foxtail	0	UPL	2
LYCALB	Silene latifolia	LYCHNIS ALBA	White Campion	0	UPL	2
SILLAC	Silphium laciniatum	Silphium laciniatum	Compass-Plant	5	UPL	2
BRAKAB	Sinapis arvensis	Brassica kaber	Charlock	0	UPL	2
SOLDUL	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0	FAC	0
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	-1
SOLRIG	Solidago rigida	Solidago rigida	Hard-Leaf Flat-Top-Goldenrod	4	FACU	1
SONOLE	Sonchus oleraceus	SONCHUS OLERACEUS	Common Sow-Thistle	0	FACU	1
SORNUT	Sorghastrum nutans	Sorghastrum nutans	Yellow Indian Grass	5	FACU	1
SPAPEC	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4	FACW	-1
ASTSAGD	Symphyotrichum drummondii	Aster sagittifolius drummondii	Drummond's Aster	2	UPL	2
ASTERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	5	FACU	1
ASTLAE	Symphyotrichum laeve	Aster laevis	Smooth Blue American-Aster	9	FACU	1
ASTSIM	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	0
ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	-1
ASTNOV	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	4	FACW	-1
ASTPIL	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	1
ASTPUN	Symphyotrichum puniceum	Aster puniceus; Aster puniceus firmus	Purple-Stem American-Aster	7	OBL	-2
ASTSHO	Symphyotrichum shortii	Aster shortii	Short's Aster	8	UPL	2
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	1
RHURAD	Toxicodendron radicans	Rhus radicans	Eastern Poison-Ivy	2	FAC	0

TRIHYB	Trifolium hybridum	TRIFOLIUM HYBRIDUM	Alsike Clover	0	FACU	1
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	1
TRIREP	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	1
TYPLAT	Typha latifolia	Typha latifolia	Broad-Leaf Cat-Tail	1	OBL	-2
ULMPUM	Ulmus pumila	ULMUS PUMILA	Siberian Elm	0	UPL	2
URTDIO	Urtica dioica ssp. gracilis	Urtica procera	Tall Nettle	2	FACW	-1
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	-1
VERSTR	Verbena stricta	Verbena stricta	Hoary Vervain	4	UPL	2
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	0
ACTALT	Verbesina alternifolia	Actinomeris alternifolia	Wingstem	5	FACW	-1
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	0
VITRIP	Vitis riparia	Vitis riparia	River-Bank Grape	2	FACW	-1
XANAME	Zanthoxylum americanum	Xanthoxylum americanum	Toothachetree	3	FACU	1

TRANSECT STRING

>

QUAD	1
SPECIES	COVER
ASTSIM	50
BIDFRO	10
POLHYD	40
POLPEN	40
URTDIO	5

>

QUAD	2
SPECIES	COVER
AMBTRI	5
BIDCER	15
ECHCRU	2
HELAUT	4
POLHYD	10
POLPEN	10
QUEBIC	5
XANAME	10

>

QUAD	3
SPECIES	COVER
AMBTRI	10
ASTSIM	60
BIDCER	30
CXSCOP	2
EUPSER	2
HELAUT	10
LEEORY	1
URTDIO	4

>

QUAD	4
SPECIES	COVER
ASTPIL	10
ASTSIM	40

PHYVIR	30
PILPUM	6
POLHYD	20
RUMCRI	2
>	
QUAD	5
SPECIES	COVER
ASTSIM	70
BIDFRO	30
EUPSER	15
POLHYD	10
POLPEN	3
>	
QUAD	6
SPECIES	COVER
ACESAI	2
ASTSIM	80
BIDFRO	2
CICMAC	5
ELYVIR	4
MORALB	10
PILPUM	2
POLHYD	2
>	
QUAD	7
SPECIES	COVER
ASTSIM	90
BIDFRO	4
EUPSER	2
POLHYD	6
POLPEN	2
>	
QUAD	8
SPECIES	COVER
ASTSIM	10
BIDCER	4
POLHYD	15
POLPEN	40
>	
QUAD	9
SPECIES	COVER
ASTSIM	20
EUPSER	4
GLEHED	2
PILPUM	40
PLARUG	2
POLHYD	8
POLPEN	2
VIOSOR	65
>	

QUAD	10
SPECIES	COVER
ACARHO	6
AMBART	2
ASTSIM	20
BIDFRO	20
BRAKAB	4
PILPUM	25
SETFAB	6
URTDIO	10

>

QUAD	11
SPECIES	COVER
ACARHO	6
AMBART	4
ASTSIM	80
EUPSER	4
PILPUM	6
POLPEN	2

>

QUAD	12
SPECIES	COVER
AMBTRI	2
ASTSIM	90
BIDCER	2
POLHYD	10
POLPEN	4

>

QUAD	13
SPECIES	COVER
ASTSIM	70
PHAARU	1
SAMCAN	6
SOLCAN	15

>

QUAD	14
SPECIES	COVER
AMBTRI	12
ASTSIM	45
EUPSER	4
RUDSUB	10
SOLCAN	50

>

QUAD	15
SPECIES	COVER
ASTSIM	15
ELYVIR	15
MONFIS	20
SOLCAN	35
SOLGRA	15

>
QUAD 16
SPECIES COVER
ASTSIM 10
MONFIS 25
SAMCAN 70
>
QUAD 17
SPECIES COVER
ASTNOV 1
ASTSAGD 8
CORRAC 10
CXBLAN 3
DAUCAR 8
ELAANG 8
ELAUMB 8
ELYCAN 12
GALAPA 2
LONTAT 2
MORALB 6
POAPRA 10
RATPIN 4
RHACAT 15
RUDTRI 3
SORNUT 8
>
QUAD 18
SPECIES COVER
AGRALB 8
ANDGER 25
ASTPIL 6
DAUCAR 8
GLEHED 8
PLALAC 6
POPDEL 2
PRUVLA 15
RATPIN 20
RUDTRI 5
SILLAC 12
SOLCAN 15
SOLGRA 10
VERURT 2
>
QUAD 19
SPECIES COVER
ASTPIL 15
CIRARV 4
ELYVIR 6
PILPUM 3
RUDTRI 70

SETGLA	2
>	
QUAD	20
SPECIES	COVER
AGRREP	25
ANDGER	30
DAUCAR	3
PASLAE	8
PASSET	8
POAPRA	4
SETFAB	6
SOLCAN	8
SOLGIG	6
SORNUT	25
>	
QUAD	21
SPECIES	COVER
ANDGER	6
ANDSCO	8
ELYCAN	70
ELYVIR	5
ERIANN	5
MONFIS	6
RATPIN	5
SOLCAN	2
>	
QUAD	22
SPECIES	COVER
AMBTRI	4
DAUCAR	4
ELYCAN	4
HELDIV	15
MONFIS	70
SETFAB	10
SETVER	15
SORNUT	5
>	
QUAD	23
SPECIES	COVER
CYPESC	10
ECHCRU	15
PASLAE	6
PASSET	6
PLAMAJ	5
POAPRA	8
SETFAB	5
SETVER	15
SORNUT	12
>	
QUAD	24

SPECIES	COVER
CIRARV	2
CXBLAN	6
ELYCAN	5
HELDIV	50
PTETRI	10
SOLCAN	20
TRIPRA	2

>

QUAD	25
SPECIES	COVER
DAUCAR	6
ELYCAN	35
ELYVIR	3
POAPRA	20
RATPIN	12
SOLCAN	8
SONOLE	10
SORNUT	20
TRIPRA	8
TRIREP	2

>

QUAD	26
SPECIES	COVER
ANDGER	8
BROINE	2
CYPESC	2
ELYCAN	50
ELYVIR	10
ERIANN	2
MONFIS	2
PLAMAJ	6
POAPRA	8
SORNUT	8

>

QUAD	27
SPECIES	COVER
BOUCUR	4
CYPESC	2
ECHCRU	2
ELYCAN	15
ELYVIR	12
SORNUT	70

>

QUAD	28
SPECIES	COVER
AGRREP	45
AMBART	4
CYPESC	35
DAUCAR	8

ELYVIR	10
LACCAN	1
PANCAP	2
SETFAB	3
SOLCAN	3
>	
QUAD	29
SPECIES	COVER
CYPESC	60
EUPSER	30
PANCAP	12
PANDIC	4
POLPEN	15
SETVER	8
>	
QUAD	30
SPECIES	COVER
CYPESC	20
DIGISC	8
ELYVIR	6
MONFIS	5
POAPRA	4
SETFAB	6
SETVER	8
SOLGRA	6
>	
QUAD	31
SPECIES	COVER
ASTLAE	4
CIRARV	5
DAUCAR	2
ELYCAN	4
ELYVIR	8
MELALB	2
MONFIS	30
POAPRA	5
RATPIN	20
ROBPSE	15
>	
QUAD	32
SPECIES	COVER
ANDGER	3
MONFIS	20
POAPRA	3
RATPIN	8
SOLCAN	40
>	
QUAD	33
SPECIES	COVER
ASTLAE	2

AVESAT	1
MELALB	2
MONFIS	15
POAPRA	6
RATPIN	12
SOLCAN	65
TRIREP	4
>	
QUAD	34
SPECIES	COVER
AVESAT	2
CIRARV	2
DAUCAR	3
ELYVIR	45
HORJUB	2
POAPRA	20
SETFAB	6
TAROFF	4
>	
QUAD	35
SPECIES	COVER
APOSIB	2
AVESAT	1
CYPESC	20
ECHCRU	6
HORJUB	2
PANCAP	1
POAPRA	8
SETFAB	20
SETVER	4
>	
QUAD	36
SPECIES	COVER
AGRALB	8
ASTLAE	10
DAUCAR	8
EUPSER	8
RATPIN	2
SONOLE	8
TRIREP	2
>	
QUAD	37
SPECIES	COVER
AGRREP	4
ELYVIR	40
EUPSER	15
POAPRA	20
SOLCAN	6
VERURT	1
>	

QUAD	38
SPECIES	COVER
AGRALB	6
DAUCAR	6
ELYVIR	12
EUPALT	10
MONFIS	4
PLAMAJ	6
POAPRA	45
RATPIN	2
SOLCAN	3
SOLGRA	4
TRIREP	4

>

QUAD	39
SPECIES	COVER
ASTPIL	2
ELYVIR	1
EUPALT	6
EUPSER	6
MELALB	6
MONFIS	10
POAPRA	50
SOLCAN	20

>

QUAD	40
SPECIES	COVER
AGRALB	50
ELYVIR	8
PHAARU	2
SETVER	30

>

QUAD	41
SPECIES	COVER
ASTERI	15
CXVULP	20
ELYVIR	25
ERIANN	6
LYCAME	12
MELALB	5
SOLDUL	3

>

QUAD	42
SPECIES	COVER
ASTLAE	15
ELYCAN	6
MELALB	35
MONFIS	3
POAPRA	6
SOLCAN	35

SOLRIG	4
>	
QUAD	43
SPECIES	COVER
ASTPIL	4
ELYCAN	8
MELALB	15
MONFIS	20
PHAARU	12
POAPRA	12
SETFAB	10
SOLCAN	3
TRIPRA	3
>	
QUAD	44
SPECIES	COVER
AMBART	10
ASTPIL	6
CIRARV	6
ERIANN	2
EUPSER	20
MONFIS	8
PHAARU	2
PRUVLA	15
SOLCAN	4
>	
QUAD	45
SPECIES	COVER
DAUCAR	4
ECHCRU	2
ELYVIR	20
MELALB	8
MONFIS	1
PANCAP	10
PLAMAJ	8
POAPRA	12
SOLCAN	6
>	
QUAD	46
SPECIES	COVER
DAUCAR	4
MELALB	90
MONFIS	2
POAPRA	4
SETFAB	5
SOLCAN	5
>	
QUAD	47
SPECIES	COVER
ASTPIL	2

ERIANN	10
MELALB	4
MONFIS	2
POAPRA	15
RUDHIR	2
SETFAB	20
SETVER	4
SOLCAN	20
SOLRIG	3
SORNUT	3

>

QUAD	48
SPECIES	COVER
CIRARV	5
ELYCAN	10
MONFIS	4
RHACAT	10
SETFAB	15
SOLCAN	25
SORNUT	15

>

QUAD	49
SPECIES	COVER
CIRARV	4
CORTRI	3
ELYCAN	20
ELYVIR	30
ERIANN	2
ERICAN	4
EUPSER	20
GEUCAN	2
RHACAT	8
SOLCAN	8
VITRIP	2

>

QUAD	50
SPECIES	COVER
BIDFRO	15
CIRARV	8
LONTAT	1
PHAARU	10
POLHYD	20
SETFAB	15

>

QUAD	51
SPECIES	COVER
MELALB	20
MONFIS	5
SETFAB	4
SOLCAN	35

>

QUAD	52
SPECIES	COVER
ANDSCO	15
ELYVIR	3
POACOM	2
POLAVI	1
SETVIR	5
SORNUT	35

>

QUAD	53
SPECIES	COVER
ANDGER	7
ANDSCO	20
BOUCUR	1
PANCAP	1
POLAVI	2
SORNUT	25

>

QUAD	54
SPECIES	COVER
ANDGER	15
ANDSCO	12
CYPESC	2
DAUCAR	1
ECHCRU	3
PASLAE	1
PASSET	1
SETVIR	12

>

QUAD	55
SPECIES	COVER
ECHCRU	3
ELYCAN	40
POLAVI	5
POLPER	3
SETVIR	25

>

QUAD	56
SPECIES	COVER
ASTPIL	12
ASTSHO	1
ECHCRU	3
ELYCAN	20
EUTGYM	15
MEDLUP	1
PRUVLA	15
RUDHIR	5
SETGLA	5
SOLCAN	2

SORNUT	25
>	
QUAD	57
SPECIES	COVER
ANDGER	5
ANDSCO	3
ASTPIL	5
CYPESC	5
ELYCAN	5
ERIANN	25
PANCAP	3
PLALAN	5
POACOM	25
SETVIR	15
>	
QUAD	58
SPECIES	COVER
ASCSYR	3
BROTEC	5
ELYCAN	3
PASLAE	10
PASSET	10
POAPRA	75
SORNUT	5
>	
QUAD	59
SPECIES	COVER
BOUCUR	8
ELYCAN	15
ELYVIR	60
>	
QUAD	60
SPECIES	COVER
ANDSCO	15
ELYCAN	20
ELYVIR	10
MONFIS	12
VERURT	5
>	
QUAD	61
SPECIES	COVER
ASTLAT	5
ELYCAN	10
EUPALT	5
EUTGYM	15
MONFIS	20
POACOM	50
PYCVIR	7
SORNUT	30
>	

QUAD	62
SPECIES	COVER
AMBART	1
ANDGER	10
ANDSCO	40
ASTPIL	2
ELYCAN	5
ELYVIR	5
ERIANN	2
MONFIS	2
SETGLA	3
>	
QUAD	63
SPECIES	COVER
ASCINC	2
ASTPUN	4
DAUCAR	1
EUPRUG	1
JUNDUD	1
PANCAP	4
RUDHIR	5
SETFAB	15
SOLCAN	65
SPAPEC	1
>	
QUAD	64
SPECIES	COVER
ELYCAN	10
ELYVIR	60
>	
QUAD	65
SPECIES	COVER
AGRALB	5
ELYCAN	95
>	
QUAD	66
SPECIES	COVER
AMBART	1
CYPESC	3
PASLAE	60
PASSET	60
POACOM	30
SETFAB	5
>	
QUAD	67
SPECIES	COVER
BOUCUR	3
CYPESC	15
POACOM	7
SETFAB	3

SORNUT	25
>	
QUAD	68
SPECIES	COVER
AGRALB	15
ASTPIL	10
HORJUB	5
PLARUG	5
POACOM	50
SETFAB	40
>	
QUAD	69
SPECIES	COVER
ASTPIL	5
DAUCAR	1
ECHCRU	2
ELYCAN	5
EUPMAA	3
PANCAP	2
PLARUG	3
POACOM	85
SETFAB	10
TAROFF	2
VERHAS	1
>	
QUAD	70
SPECIES	COVER
AGRALB	15
AMBART	5
ANDSCO	15
ASTPIL	10
MONFIS	10
SOLCAN	5
TRIPRA	3
>	
QUAD	71
SPECIES	COVER
AMBART	5
ASTPIL	10
DAUCAR	1
ELYVIR	60
ERIANN	5
EUPALT	3
GLEHED	15
MONFIS	8
PANVIR	1
TRIHYB	5
>	
QUAD	72
SPECIES	COVER

MONFIS	2
POACOM	1
RATPIN	7
RUDHIR	1
SETFAB	2
SETGLA	1
SORNUT	45
>	
QUAD	73
SPECIES	COVER
AMBART	20
CORTRI	15
PANVIR	5
POACOM	3
RATPIN	10
TRIHYB	5
>	
QUAD	74
SPECIES	COVER
AGRALB	12
CIRARV	1
CYPESC	2
DAUCAR	4
EUPALT	3
PANCAP	3
PILPUM	3
RATPIN	4
RUDHIR	3
SETVER	7
>	
QUAD	75
SPECIES	COVER
DAUCAR	3
LEEORY	30
POACOM	15
RATPIN	5
SETFAB	25
SOLCAN	4
TAROFF	2
>	
QUAD	76
SPECIES	COVER
ASTSIM	1
DAUCAR	5
MELLOF	15
PHAARU	2
POAPRA	15
RATPIN	15
SOLCAN	50
>	

QUAD	77
SPECIES	COVER
MELLOF	5
MONFIS	15
SETFAB	10
SOLCAN	35
>	
QUAD	78
SPECIES	COVER
MELLOF	100
MONFIS	3
SETFAB	5
SOLCAN	5
>	
QUAD	79
SPECIES	COVER
MELLOF	50
MONFIS	5
SOLCAN	50
>	
QUAD	80
SPECIES	COVER
ASTLAE	5
MELLOF	25
MONFIS	5
SOLCAN	40
>	
QUAD	81
SPECIES	COVER
CIRARV	5
MONFIS	1
>	
QUAD	82
SPECIES	COVER
MELLOF	20
MONFIS	2
SOLCAN	40
>	
QUAD	83
SPECIES	COVER
AGAPUR	3
ANDGER	20
CXBLAN	3
HELAUT	65
JUNDUD	5
RUDHIR	1
SOLGIG	2
TRIPRA	8
>	
QUAD	84

SPECIES	COVER
ANDGER	7
APOSIB	3
ASTNOV	1
HELAUT	60
LOLMUL	2
LYCAME	2
PYCVIR	15
RUDSUB	5
SOLGIG	5
TRIPRA	7

>

QUAD	85
SPECIES	COVER
ASTPIL	1
HELAUT	10
PYCVIR	30
RUDTRI	1
SOLGIG	25
TRIPRA	2

>

QUAD	86
SPECIES	COVER
CICINT	1
CXVULP	3
HELAUT	50
PYCVIR	5
SOLGIG	40
TRIPRA	3

>

QUAD	87
SPECIES	COVER
ASTPIL	2
CICINT	2
CXBLAN	3
HELAUT	20
PYCVIR	4
RUDHIR	3
SETGLA	3
SOLGIG	7
TAROFF	1
TRIPRA	7

>

QUAD	88
SPECIES	COVER
AGRALB	20
ASTPIL	20
CXSCOP	5
CXVULP	30
HELAUT	25

JUNDUD	20
LEEORY	3
PLAMAJ	1
RUDHIR	3
SCIATV	3
TRIPRA	5
>	
QUAD	89
SPECIES	COVER
AMARET	7
AMBART	35
ERICAN	8
PILPUM	4
>	
QUAD	90
SPECIES	COVER
BIDFRO	12
LEEVIR	10
PILPUM	5
SOLGRA	40
TYPLAT	4
VERHAS	7
>	
QUAD	91
SPECIES	COVER
AMBART	40
AMBTRI	20
ELYVIR	5
LEEVIR	10
PILPUM	10
SOLCAN	10
>	
QUAD	92
SPECIES	COVER
ACTALT	3
AMBART	5
GALAPA	2
MONFIS	60
SOLGRA	5
>	
QUAD	93
SPECIES	COVER
ACTALT	1
AMBART	15
AMBTRI	3
ASTLAT	3
DAUCAR	1
ELYVIR	45
MONFIS	25
RUDHIR	5

SOLCAN	8
VERURT	5
>	
QUAD	94
SPECIES	COVER
AMBART	12
ANDGER	3
MELLOF	3
PHAARU	7
SOLCAN	40
SORNUT	3
TRIPRA	3
VIOSOR	5
>	
QUAD	95
SPECIES	COVER
AMBART	3
ASTSHO	1
CXBLAN	1
DAUCAR	5
EUPALT	10
LYCAME	10
RUDHIR	1
SOLCAN	10
SOLGRA	55
TRIPRA	5
>	
QUAD	96
SPECIES	COVER
CXBLAN	3
CXVULP	5
LYCAME	5
MELALB	10
POPDEL	7
SETGLA	5
SOLCAN	12
SOLGRA	85
>	
QUAD	97
SPECIES	COVER
ANDGER	30
ASTSHO	3
BIDFRO	2
CIRARV	3
DAUCAR	3
GEUCAN	3
LYCAME	5
MELLOF	5
MORALB	2
SOLCAN	60

SOLGIG	2
>	
QUAD	98
SPECIES	COVER
CXSTIP	20
DAUCAR	3
EUPMAC	15
POPDEL	7
PRUVUV	10
SOLGRA	50
>	
QUAD	99
SPECIES	COVER
ACTALT	3
ASTSIM	3
CINARU	3
CXSTIP	25
CXVULP	5
GALAPA	3
GEUCAN	10
HACVIR	12
PARQUI	2
RUBOCC	3
SOLCAN	55
SOLGRA	5
VERSTR	1
>	
QUAD	100
SPECIES	COVER
ACTALT	10
CXSTIP	40
GALAPA	5
GEUCAN	5
RUBOCC	1
RUDLAC	3
SOLCAN	90
>	
QUAD	101
SPECIES	COVER
ACTALT	10
AMBTRI	3
ASTLAT	5
CXBLAN	10
CXCOMM	5
ELYCAN	2
GEUCAN	5
MELLOF	10
RHURAD	2
SOLCAN	30
>	

QUAD	102
SPECIES	COVER
ACTALT	15
AMBTRI	5
ASCSYR	3
ASTLAT	12
BOECYL	5
CINARU	2
CIRARV	2
FRAPEN	7
LEEORY	2
LYCVIR	1
PILPUM	1
POLHYD	1
POPDEL	3
RHACAT	1
SOLCAN	1
SOLGIG	20
URTDIO	3
>	
QUAD	103
SPECIES	COVER
ACTALT	1
AMBTRI	50
ASTLAT	30
CRYCAN	3
ELYVIR	5
GEUCAN	5
IMPCAP	5
POLVIR	5
VITRIP	3
>	
QUAD	104
SPECIES	COVER
ACARHO	1
ALLPET	2
CIRARV	5
ELYCAN	40
ELYVIR	20
EUPALT	5
OXASTR	1
PARQUI	1
RHACAT	1
VITRIP	1
>	
QUAD	105
SPECIES	COVER
ASTLAT	7
ASTPUN	1
CIRARV	7

CXBLAN	4
CXGRAV	15
ELYVIR	25
EUPALT	20
GEUCAN	5
OXASTR	1
POLVIR	3
RHACAT	12
ULMPUM	3
VITRIP	3
>	
QUAD	106
SPECIES	COVER
ELYCAN	80
GEUCAN	5
PILPUM	20
POLHYD	20
VIOSOR	2
>	
QUAD	107
SPECIES	COVER
ASTLAT	5
LYCALB	2
PILPUM	10
POLHYD	3
VITRIP	5
>	
QUAD	108
SPECIES	COVER
BAPBRA	1
>	
QUAD	109
SPECIES	COVER
ASTLAT	15
ASTPUN	4
CXGRAV	15
DUCIND	2
ELYCAN	2
LYSNUM	5
OXASTR	3
PLAMAJ	5
POPDEL	3
SETGLA	5
SOLCAN	75
TRIPRA	7
>	
QUAD	110
SPECIES	COVER
ASTLAT	15
ASTPIL	3

CXGRAV	7
EUPALT	3
GLEHED	5
LACSER	15
LYCAME	5
POPDEL	5
PRUVUV	30
SOLCAN	50

>

QUAD	111
SPECIES	COVER
AMBTRI	4
ASTLAT	25
ASTPIL	25
ASTPUN	10
CIRARV	3
CIRDIS	3
ELYCAN	15
LYCAME	3
PHAARU	2
PILPUM	2
PLARUG	7
VERSTR	5
VIOSOR	4

>

QUAD	112
SPECIES	COVER
AMBTRI	5
ASTLAT	65
ASTPUN	5
CXBLAN	12
ELYCAN	7
GEUCAN	7
LYCAME	5
PHAARU	5
PRUVUV	7
RHACAT	7
VERSTR	7
VIOSOR	7
VITRIP	3

>

QUAD	113
SPECIES	COVER
BIDFRO	2
CIRARV	2
ELYCAN	7
IMPCAP	2
PILPUM	20
POLHYD	3
POLVIR	12

RHACAT	15
RHURAD	2
SOLCAN	2
TAROFF	1

>

QUAD	114
SPECIES	COVER
ACARHO	3
AMBTRI	7
ASTLAT	40
ASTPUN	12
GALAPA	5
GEUCAN	7
PHAARU	10
PILPUM	20
RHURAD	10
SOLCAN	10
VITRIP	7

>

QUAD	115
SPECIES	COVER
ASTSHO	2
FRAPEN	2
GEUCAN	10
HACVIR	3
PHAARU	15
PILPUM	12
POLHYD	1
SOLCAN	5

>

QUAD	116
SPECIES	COVER
ASTLAT	1
CARCOR	1
CIRLUT	1
CXGRAV	5
ELYCAN	5
ELYVIR	75
GEUCAN	7
POLVIR	2
VIOSOR	10

>

QUAD	117
SPECIES	COVER
ASTSAGD	1
ELYCAN	5
EUPRUG	7
GLEHED	30
LEOCAR	5
PARQUI	7

TAROFF	1
VIOSOR	5
>	
QUAD	118
SPECIES	COVER
AMBART	2
ASTLAT	3
ASTPUN	2
GEUCAN	3
GLEHED	3
LYCAME	3
PILPUM	50
POLHYD	2
POLPER	5
POLVIR	4
RUDLAC	10
RUDSUB	75
VIOSOR	25

SITE: WCERT
LOCALE: Mack Rd.
BY: Mark O'Leary and Cecily Cunz
NOTES: 2016 Fall Vascular Plant Transects- 8/30/2016

W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS
2.75	6.35	5.5	-0.67	0	3	4
3.25	7.51	6.5	0	0.5	3	4
3	6.36	5.2	-0.5	0.33	2	3
3.33	7.07	5.77	0.5	1	2	3
5	7.07	7.07	0.5	0.5	2	2
4	8	8	0.5	0.5	4	4
3.67	6.35	6.35	0.67	0.67	3	3
3.67	6.35	6.35	0.67	0.67	3	3
2.75	5.5	5.5	1	1	4	4
2	5	4.47	0.75	0.8	4	5
5	7.07	7.07	0.5	0.5	2	2
5	7.07	7.07	0.5	0.5	2	2
5	7.07	7.07	0.5	0.5	2	2
3.75	7.5	7.5	0.5	0.5	4	4
4	8	8	1	1	4	4
3.8	8.5	8.5	1	1	5	5
2.75	5.5	5.5	0.5	0.5	4	4
5	7.07	7.07	0.5	0.5	2	2
4.8	10.73	10.73	0.8	0.8	5	5
4	8	8	0.5	0.5	4	4
5	7.07	7.07	0.5	0.5	2	2
5	7.07	7.07	0.5	0.5	2	2
5	7.07	7.07	0.5	0.5	2	2
5	7.07	7.07	0.5	0.5	2	2
5	5	5	0	0	1	1
5	5	5	0	0	1	1
1.67	5	2.89	0	-0.33	1	3
5	8.66	8.66	1	1	3	3
5	7.07	7.07	0.5	0.5	2	2
5.2	11.63	11.63	0.2	0.2	5	5
5	7.07	7.07	0.5	0.5	2	2
3	7.5	6.71	0.25	0	4	5
0	0	0		1		1
3.4	7.6	7.6	-1	-1	5	5
3.67	6.35	6.35	0.67	0.67	3	3
3.67	6.35	6.35	0.67	0.67	3	3
2	4.24	3.46	1	1.33	2	3
2.75	6.35	5.5	0.67	1	3	4
2.75	6.35	5.5	0.67	1	3	4
3.67	6.35	6.35	0.67	0.67	3	3
2.2	5.5	4.92	0.75	0.4	4	5
0.5	1	0.71	1	1	1	2

3.75	7.5	7.5	0.75	0.75	4	4
3.33	8.94	8.16	0.8	0.83	5	6
5	7.07	7.07	0.5	0.5	2	2
2.2	5.5	4.92	0.75	1	4	5
3.7	6.66	6.39	0.48	0.56	2.89	3.24
1.28	1.91	2.04	0.42	0.41	1.25	1.29

TRANSECT SUMMARY

C	NUMBER				
				22	NATIVE SPECIES
0	5			30	TOTAL SPECIES
1	2			3.14	NATIVE MEAN C
2	2			2.3	W/Adventives
3	0	0:	22.73%	14.71	NATIVE FQI
4	6	1 to 3:	18.18%	12.6	W/Adventives
5	6	4 to 7:	54.55%	0.41	NATIVE MEAN W
6	0	8 to 10:	4.55%	0.47	W/Adventives
7	0			63.63	
8	0				
9	1				
10	0				

PHYSIOGNOMIC SUMMARY

PHYSIOGNOMY

NATIVE	22	73.33%	ADVENTIVE	8	26.67%
Tree	1	3.33%	Tree	1	3.33%
Shrub	0	0.00%	Shrub	0	0.00%
Vine	0	0.00%	Vine	0	0.00%
Forb	15	50.00%	Forb	3	10.00%
Grass	4	13.33%	Grass	4	13.33%
Sedge	2	6.67%	Sedge	0	0.00%
Fern	0	0.00%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOG	FRQ	COV	RFRQ	RCOV	RIV
N Tree	1	1	0.7	.	0.3
N Forb	45	560	30.2	11.4	20.8
N Grass	85	4135	57	83.8	70.4
N Sedge	2	25	1.3	0.5	0.9
A Tree	1	3	0.7	0.1	0.4
A Forb	9	34	6	0.7	3.4
A Grass	6	175	4	3.5	3.8

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME (NWPL/MOHLENBROCK)	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Andropogon gerardii	5	FAC	43	2175	28.9	44.1	36.5
Sorghastrum nutans	5	FACU	36	1860	24.2	37.7	30.9
Solidago canadensis	1	FACU	17	248	11.4	5	8.2
Solidago gigantea	4	FACW	3	195	2	4	3
Schedonorus pratensis	0	FACU	1	100	0.7	2	1.3
Panicum virgatum	5	FAC	4	85	2.7	1.7	2.2
Helianthus grosseserratus	2	FACW	3	30	2	0.6	1.3
Agrostis gigantea	0	FACW	2	30	1.3	0.6	1
Bromus inermis	0	FACU	2	30	1.3	0.6	1
Artemisia vulgaris	0	UPL	4	27	2.7	0.5	1.6
Silphium integrifolium	5	UPL	4	23	2.7	0.5	1.6
Elymus canadensis	4	FACU	2	15	1.3	0.3	0.8
Phragmites australis ssp. australis	0	FACW	1	15	0.7	0.3	0.5
Scirpus atrovirens	4	OBL	1	15	0.7	0.3	0.5
Rudbeckia subtomentosa	9	FACU	2	12	1.3	0.2	0.8
Symphyotrichum pilosum	0	FACU	4	11	2.7	0.2	1.5
Symphyotrichum ericoides	5	FACU	1	10	0.7	0.2	0.4
Carex vulpinoidea	2	FACW	1	10	0.7	0.2	0.4
Symphyotrichum lateriflorum	4	FACW	2	8	1.3	0.2	0.8
Daucus carota	0	UPL	4	6	2.7	0.1	1.4
Erigeron annuus	0	FACU	1	5	0.7	0.1	0.4
Eupatorium altissimum	0	UPL	1	5	0.7	0.1	0.4
Verbena urticifolia	5	FAC	1	5	0.7	0.1	0.4
Physalis subglabrata	0	UPL	2	4	1.3	0.1	0.7
Morus alba	0	FAC	1	3	0.7	0.1	0.4
Calystegia sepium	1	FAC	2	2	1.3	.	0.7
Asclepias syriaca	0	FACU	1	1	0.7	.	0.3
Plantago lanceolata	0	FACU	1	1	0.7	.	0.3
Monarda fistulosa	4	FACU	1	1	0.7	.	0.3
Ulmus rubra	4	FAC	1	1	0.7	.	0.3
			149	4933			

TRANSECT INVENTORY

Acronym	Scientific Name (NWPL/Mohlenbrock)	Scientific Name Synonym (Swink & Wilhelm)	Common Name (NWPL/Mohlenbrock)	C	WETNESS	WETNESS VALUE
AGRALB	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	-1
ANDGER	Andropogon gerardii	Andropogon gerardii	Big Bluestem	5	FAC	0
ARTVUL	Artemisia vulgaris	ARTEMISIA VULGARIS	Common Mugwort	0	UPL	2
ASCSYR	Asclepias syriaca	Asclepias syriaca	Common Milkweed	0	FACU	1
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	1
CONSEP	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	0
CXVULP	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	-1
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	2

ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	1
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	1
EUPALT	Eupatorium altissimum	Eupatorium altissimum	Tall Boneset	0	UPL	2
HELGRO	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	-1
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	1
MORALB	Morus alba	MORUS ALBA	White Mulberry	0	FAC	0
PANVIR	Panicum virgatum	Panicum virgatum	Wand Panic Grass	5	FAC	0
PHRAUSU	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0	FACW	-1
PHYSUB	Physalis subglabrata	Physalis subglabrata	Smooth Ground Cherry	0	UPL	2
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	1
RUDSUB	Rudbeckia subtomentosa	Rudbeckia subtomentosa	Sweet Coneflower	9	FACU	1
FESELA	Schedonorus pratensis	FESTUCA ELATIOR	Meadow Fescue	0	FACU	1
SCIATV	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	-2
SILINT	Silphium integrifolium	Silphium integrifolium deamii	Entire-Leaf Rosinweed	5	UPL	2
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1
SOLGIG	Solidago gigantea	Solidago gigantea	Late Goldenrod	4	FACW	-1
SORNUT	Sorghastrum nutans	Sorghastrum nutans	Yellow Indian Grass	5	FACU	1
ASTERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	5	FACU	1
ASTLAT	Symphyotrichum lateriflorum	Aster lateriflorus	Farewell-Summer	4	FACW	-1
ASTPIL	Symphyotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	1
ULMRUB	Ulmus rubra	Ulmus rubra	Slippery Elm	4	FAC	0
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	0

TRANSECT STRING

>

QUAD	1
SPECIES	COVER
ANDGER	40
ARTVUL	15
HELGRO	5
SOLGIG	30

>

QUAD	2
SPECIES	COVER
ANDGER	5
ARTVUL	3
ELYCAN	10
SOLGIG	90

>

QUAD	3
SPECIES	COVER
ANDGER	50
ARTVUL	5
SOLGIG	75

>

QUAD	4
SPECIES	COVER

ANDGER 5
ARTVUL 4
SORNUT 100
>
QUAD 5
SPECIES COVER
ANDGER 20
SORNUT 80
>
QUAD 6
SPECIES COVER
ANDGER 50
PANVIR 5
SOLCAN 10
SORNUT 50
>
QUAD 7
SPECIES COVER
ANDGER 50
SOLCAN 8
SORNUT 50
>
QUAD 8
SPECIES COVER
ANDGER 75
SOLCAN 5
SORNUT 25
>
QUAD 9
SPECIES COVER
ANDGER 45
PHYSUB 3
SOLCAN 10
SORNUT 45
>
QUAD 10
SPECIES COVER
ANDGER 95
ASCSYR 1
ASTPIL 3
PLALAN 1
SORNUT 10
>
QUAD 11
SPECIES COVER
ANDGER 5
SORNUT 90
>
QUAD 12
SPECIES COVER

ANDGER	80
SORNUT	20
>	
QUAD	13
SPECIES	COVER
ANDGER	50
SORNUT	50
>	
QUAD	14
SPECIES	COVER
ANDGER	50
CONSEP	1
MONFIS	1
SORNUT	50
>	
QUAD	15
SPECIES	COVER
ANDGER	50
SILINT	2
SOLCAN	3
SORNUT	50
>	
QUAD	16
SPECIES	COVER
ANDGER	50
PHYSUB	1
SILINT	5
SORNUT	50
ULMRUB	1
>	
QUAD	17
SPECIES	COVER
ANDGER	25
ASTPIL	1
CONSEP	1
SORNUT	75
>	
QUAD	18
SPECIES	COVER
ANDGER	50
SORNUT	50
>	
QUAD	19
SPECIES	COVER
ANDGER	80
ELYCAN	5
PANVIR	10
SILINT	1
SORNUT	10
>	

QUAD	20
SPECIES	COVER
ANDGER	50
PANVIR	10
SOLCAN	5
SORNUT	50
>	
QUAD	21
SPECIES	COVER
ANDGER	50
SORNUT	50
>	
QUAD	22
SPECIES	COVER
ANDGER	90
SORNUT	10
>	
QUAD	23
SPECIES	COVER
ANDGER	75
SORNUT	25
>	
QUAD	24
SPECIES	COVER
ANDGER	50
SORNUT	50
>	
QUAD	25
SPECIES	COVER
ANDGER	100
>	
QUAD	26
SPECIES	COVER
ANDGER	100
>	
QUAD	27
SPECIES	COVER
ANDGER	90
MORALB	3
PHRAUSU	15
>	
QUAD	28
SPECIES	COVER
ANDGER	75
SILINT	15
SORNUT	15
>	
QUAD	29
SPECIES	COVER
ANDGER	50

SORNUT	50
>	
QUAD	30
SPECIES	COVER
ANDGER	10
ASTERI	10
HELGRO	10
PANVIR	60
RUDSUB	7
>	
QUAD	31
SPECIES	COVER
ANDGER	10
SORNUT	90
>	
QUAD	32
SPECIES	COVER
AGRALB	20
ANDGER	90
ASTLAT	3
SOLCAN	3
SORNUT	10
>	
QUAD	33
SPECIES	COVER
FESELA	100
>	
QUAD	34
SPECIES	COVER
ANDGER	95
ASTLAT	5
CXVULP	10
HELGRO	15
SCIATV	15
>	
QUAD	35
SPECIES	COVER
ANDGER	15
SOLCAN	20
SORNUT	95
>	
QUAD	36
SPECIES	COVER
ANDGER	10
SOLCAN	8
SORNUT	90
>	
QUAD	37
SPECIES	COVER
DAUCAR	3

SOLCAN	5
SORNUT	100
>	
QUAD	38
SPECIES	COVER
ANDGER	50
DAUCAR	1
SOLCAN	8
SORNUT	50
>	
QUAD	39
SPECIES	COVER
ANDGER	10
DAUCAR	1
SOLCAN	10
SORNUT	90
>	
QUAD	40
SPECIES	COVER
ANDGER	10
SOLCAN	15
SORNUT	90
>	
QUAD	41
SPECIES	COVER
AGRALB	10
ANDGER	40
ERIANN	5
SOLCAN	25
SORNUT	40
>	
QUAD	42
SPECIES	COVER
BROINE	20
SOLCAN	100
>	
QUAD	43
SPECIES	COVER
ANDGER	90
EUPALT	5
SORNUT	10
VERURT	5
>	
QUAD	44
SPECIES	COVER
ANDGER	45
ASTPIL	5
BROINE	10
RUDSUB	5
SOLCAN	5

SORNUT	45
>	
QUAD	45
SPECIES	COVER
ANDGER	50
SORNUT	50
>	
QUAD	46
SPECIES	COVER
ANDGER	45
ASTPIL	2
DAUCAR	1
SOLCAN	8
SORNUT	45
>	

SITE: WCERT
LOCALE: Reach 5D- Mack Rd
BY: Willam Stoll , Kasey Clark
NOTES: 2016 Vascular Plant Fall Transects- 8/30/2016

TRANSECT QUADRAT

QUAD	MC	W/Ad	FQI	W/Ad	MW	W/Ad	NS	TS
T02-01	2	1.5	6	5.2	0.89	1	9	12
T02-02	2.83	1.89	6.94	5.67	1	1	6	9
T02-03	3.67	2.44	8.98	7.33	1	1.11	6	9
T02-04	2	1.33	4	3.27	0	0	4	6
T02-05	4.5	1.8	9	5.69	0.25	0.6	4	10
T02-06		0	0	0		1		3
T02-07	5	0.83	5	2.04	0	0.67	1	6
T02-08	4.67	1.75	8.08	4.95	0.33	1	3	8
T02-09	3.33	1.43	5.77	3.78	1	0.71	3	7
T02-10	0	0	0	0	1	1.2	1	5
T02-11	0	0	0	0	1	1	1	6
T02-12	3.5	1.27	7	4.22	0.5	0.64	4	11
T02-13	4	1.14	5.66	3.02	0	0.43	2	7
AVG	2.73	1.18	5.11	3.47	0.54	0.8	3.38	7.62
STD	1.8	0.78	3.25	2.4	0.45	0.33	2.53	2.53

TRANSECT SUMMARY

C	NUMBER				
0	6			20	NATIVE SPECIES
1	3			37	TOTAL SPECIES
2	0			2.7	NATIVE MEAN C
3	2	0:	30.00%	1.46	W/Adventives
4	4	1 to 3:	25.00%	12.07	NATIVE FQI
5	4	4 to 7:	40.00%	8.88	W/Adventives
6	0	8 to 10:	5.00%	0.5	NATIVE MEAN W
7	0			0.68	W/Adventives
8	0				
9	1				
10	0				

PHYSIOGNOMIC SUMMARY

PHYSIOGNOMY

NATIVE	20	54.05%	ADVENTIVE	17	45.95%
Tree	0	0.00%	Tree	0	0.00%
Shrub	1	2.70%	Shrub	0	0.00%
Vine	1	2.70%	Vine	0	0.00%
Forb	15	40.54%	Forb	10	27.03%
Grass	3	8.11%	Grass	7	18.92%

Sedge	0	0.00%	Sedge	0	0.00%
Fern	0	0.00%			

PHYSIOGNOMIC RELATIVE IMPORTANCE VALUES

PHYSIOG	FRQ	COV	RFRQ	RCOV	RIV
N Shrub	2	11	2	1.1	1.5
N Vine	5	46	5.1	4.5	4.8
N Forb	30	135	30.3	13.1	21.7
N Grass	7	61	7.1	5.9	6.5
A Forb	28	153	28.3	14.9	21.6
A Grass	27	621	27.3	60.5	43.9

SPECIES RELATIVE IMPORTANCE VALUES

SCIENTIFIC NAME (NWPL/MOHLENBROCK)	C	WETNESS	FRQ	COV	RFRQ	RCOV	RIV
Paspalum laeve	0	FACW	7	151	7.1	14.7	10.9
Poa pratensis	0	FAC	3	148	3	14.4	8.7
Avena sativa	0	UPL	5	140	5.1	13.6	9.3
Schedonorus pratensis	0	FACU	2	75	2	7.3	4.7
Setaria viridis	0	UPL	6	65	6.1	6.3	6.2
Smilax lasioneuron	5	UPL	5	46	5.1	4.5	4.8
Taraxacum officinale	0	FACU	7	42	7.1	4.1	5.6
Elymus virginicus	4	FACW	4	36	4	3.5	3.8
Echinacea purpurea	3	UPL	3	35	3	3.4	3.2
Daucus carota	0	UPL	3	35	3	3.4	3.2
Plantago lanceolata	0	FACU	5	30	5.1	2.9	4
Bromus inermis	0	FACU	2	26	2	2.5	2.3
Symphyotrichum ericoides	5	FACU	4	24	4	2.3	3.2
Elymus canadensis	4	FACU	2	19	2	1.9	1.9
Setaria faberi	0	FACU	2	16	2	1.6	1.8
Solidago canadensis	1	FACU	3	15	3	1.5	2.2
Sonchus asper	0	FACU	2	14	2	1.4	1.7
Trifolium pratense	0	FACU	3	11	3	1.1	2.1
Rubus hispidus	9	FACW	2	11	2	1.1	1.5
Medicago lupulina	0	FACU	3	10	3	1	2
Geum canadense	1	FAC	3	9	3	0.9	2
Ambrosia artemisiifolia	0	FACU	1	7	1	0.7	0.8
Heliopsis helianthoides	5	FACU	2	7	2	0.7	1.4
Verbena urticifolia	5	FAC	2	7	2	0.7	1.4
Erigeron annuus	0	FACU	3	7	3	0.7	1.9
Echinochloa crus-galli	0	FACW	1	6	1	0.6	0.8
Trifolium repens	0	FACU	2	6	2	0.6	1.3
Oxalis stricta	0	FACU	2	5	2	0.5	1.3
Plantago rugelii	0	FAC	1	5	1	0.5	0.7
Acalypha rhomboidea	0	FACU	2	5	2	0.5	1.3
Viola sororia	3	FAC	1	4	1	0.4	0.7
Alliaria petiolata	0	FAC	1	2	1	0.2	0.6

Fragaria virginiana	1	FACU	1	2	1	0.2	0.6
Verbena hastata	4	FACW	1	2	1	0.2	0.6
Polygonum aviculare	0	FAC	1	2	1	0.2	0.6
Monarda fistulosa	4	FACU	1	1	1	0.1	0.6
Cerastium fontanum	0	FACU	1	1	1	0.1	0.6
			99	1027			

TRANSECT INVENTORY

Acronym	Scientific Name (NWPL/Mohlenbrock)	Scientific Name Synonym (Swink & Wilhelm)	Common Name (NWPL/Mohlenbrock)	C	WETNESS	WETNESS VALUE
ACARHO	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	1
ALLPET	Alliaria petiolata	ALLIARIA PETIOLATA	Garlic-Mustard	0	FAC	0
AMBART	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	1
AVESAT	Avena sativa	AVENA SATIVA	Oats	0	UPL	2
BROINE	Bromus inermis	BROMUS INERMIS	Smooth Brome	0	FACU	1
CERVUL	Cerastium fontanum	CERASTIUM VULGATUM	Common Mouse-Ear Chickweed	0	FACU	1
DAUCAR	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	2
ECHPUR	Echinacea purpurea	Echinacea purpurea	Purple Coneflower	3	UPL	2
ECHCRU	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	-1
ELYCAN	Elymus canadensis	Elymus canadensis	Nodding Wild Rye	4	FACU	1
ELYVIR	Elymus virginicus	Elymus virginicus	Virginia Wild Rye	4	FACW	-1
ERIANN	Erigeron annuus	Erigeron annuus	Eastern Daisy Fleabane	0	FACU	1
FRAVIR	Fragaria virginiana	Fragaria virginiana	Virginia Strawberry	1	FACU	1
GEUCAN	Geum canadense	Geum canadense	White Avens	1	FAC	0
HELHEL	Heliopsis helianthoides	Heliopsis helianthoides	Smooth Oxeye	5	FACU	1
MEDLUP	Medicago lupulina	MEDICAGO LUPULINA	Black Medick	0	FACU	1
MONFIS	Monarda fistulosa	Monarda fistulosa	Oswego-Tea	4	FACU	1
OXASTR	Oxalis stricta	Oxalis europaea	Upright Yellow Wood-Sorrel	0	FACU	1
PASLAE	Paspalum laeve	PASPALUM LAEVE	Field Crown Grass	0	FACW	-1
PLALAN	Plantago lanceolata	PLANTAGO LANCEOLATA	English Plantain	0	FACU	1
PLARUG	Plantago rugelii	Plantago rugelii	Black-Seed Plantain	0	FAC	0
POAPRA	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0	FAC	0
POLAVI	Polygonum aviculare	POLYGONUM AVICULARE	Yard Knotweed	0	FAC	0
RUBHIS	Rubus hispidus	Rubus hispidus	Bristly Dewberry	9	FACW	-1
FESELA	Schedonorus pratensis	FESTUCA ELATIOR	Meadow Fescue	0	FACU	1
SETFAB	Setaria faberi	SETARIA FABERI	Japanese Bristle Grass	0	FACU	1
SETVIR	Setaria viridis	SETARIA VIRIDIS	Green Foxtail	0	UPL	2
SMILAS	Smilax lasioneuron	Smilax lasioneura	Common Carrion Flower	5	UPL	2
SOLCAN	Solidago canadensis	Solidago canadensis	Canadian Goldenrod	1	FACU	1
SONASP	Sonchus asper	SONCHUS ASPER	Spiny-Leaf Sow-Thistle	0	FACU	1
ASTERI	Symphyotrichum ericoides	Aster ericoides	White Heath American-Aster	5	FACU	1
TAROFF	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	1
TRIPRA	Trifolium pratense	TRIFOLIUM PRATENSE	Red Clover	0	FACU	1
TRIREP	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	1
VERHAS	Verbena hastata	Verbena hastata	Simpler's-Joy	4	FACW	-1
VERURT	Verbena urticifolia	Verbena urticifolia leiocarpa	White Vervain	5	FAC	0
VIOSOR	Viola sororia	Viola sororia	Hooded Blue Violet	3	FAC	0

TRANSECT
STRING
>
 QUAD 1
SPECIES COVER
AMBART 7
ASTERI 5
ECHPUR 15
GEUCAN 3
OXASTR 3
PLARUG 5
SETVIR 40
SMILAS 6
SOLCAN 1
TAROFF 4
TRIPRA 1
VIOSOR 4
>
 QUAD 2
SPECIES COVER
ALLPET 2
ASTERI 3
AVESAT 15
FRAVIR 2
GEUCAN 2
MONFIS 1
SMILAS 8
SOLCAN 12
TAROFF 4
>
 QUAD 3
SPECIES COVER
ACARHO 3
ECHPUR 15
HELHEL 3
OXASTR 2
RUBHIS 3
SETFAB 8
SETVIR 6
SMILAS 15
TAROFF 12
>
 QUAD 4
SPECIES COVER
ECHCRU 6
ECHPUR 5
ELYVIR 8
GEUCAN 4
PASLAE 40
SONASP 8

>
 QUAD 5
SPECIES COVER
ACARHO 2
CERVUL 1
MEDLUP 8
PASLAE 10
RUBHIS 8
SETVIR 5
SMILAS 12
TAROFF 6
TRIPRA 8
VERHAS 2
>
 QUAD 6
SPECIES COVER
AVESAT 45
PASLAE 20
SETVIR 2
>
 QUAD 7
SPECIES COVER
AVESAT 35
PASLAE 12
POLAVI 2
SETVIR 4
SONASP 6
VERURT 3
>
 QUAD 8
SPECIES COVER
AVESAT 20
DAUCAR 2
ELYVIR 5
PLALAN 6
SMILAS 5
TAROFF 4
TRIREP 4
VERURT 4
>
 QUAD 9
SPECIES COVER
ASTERI 1
ERIANN 2
HELHEL 4
PASLAE 65
PLALAN 2
SETFAB 8
TAROFF 4
>

QUAD	10
SPECIES	COVER
AVESAT	25
ERIANN	3
PLALAN	6
TAROFF	8
TRIREP	2

>

QUAD	11
SPECIES	COVER
BROINE	20
DAUCAR	8
ERIANN	2
MEDLUP	1
PLALAN	10
POAPRA	80

>

QUAD	12
SPECIES	COVER
ASTERI	15
BROINE	6
ELYCAN	15
ELYVIR	20
FESELA	5
MEDLUP	1
PASLAE	2
POAPRA	60
SETVIR	8
SOLCAN	2
TRIPRA	2

>

QUAD	13
SPECIES	COVER
DAUCAR	25
ELYCAN	4
ELYVIR	3
FESELA	70
PASLAE	2
PLALAN	6
POAPRA	8

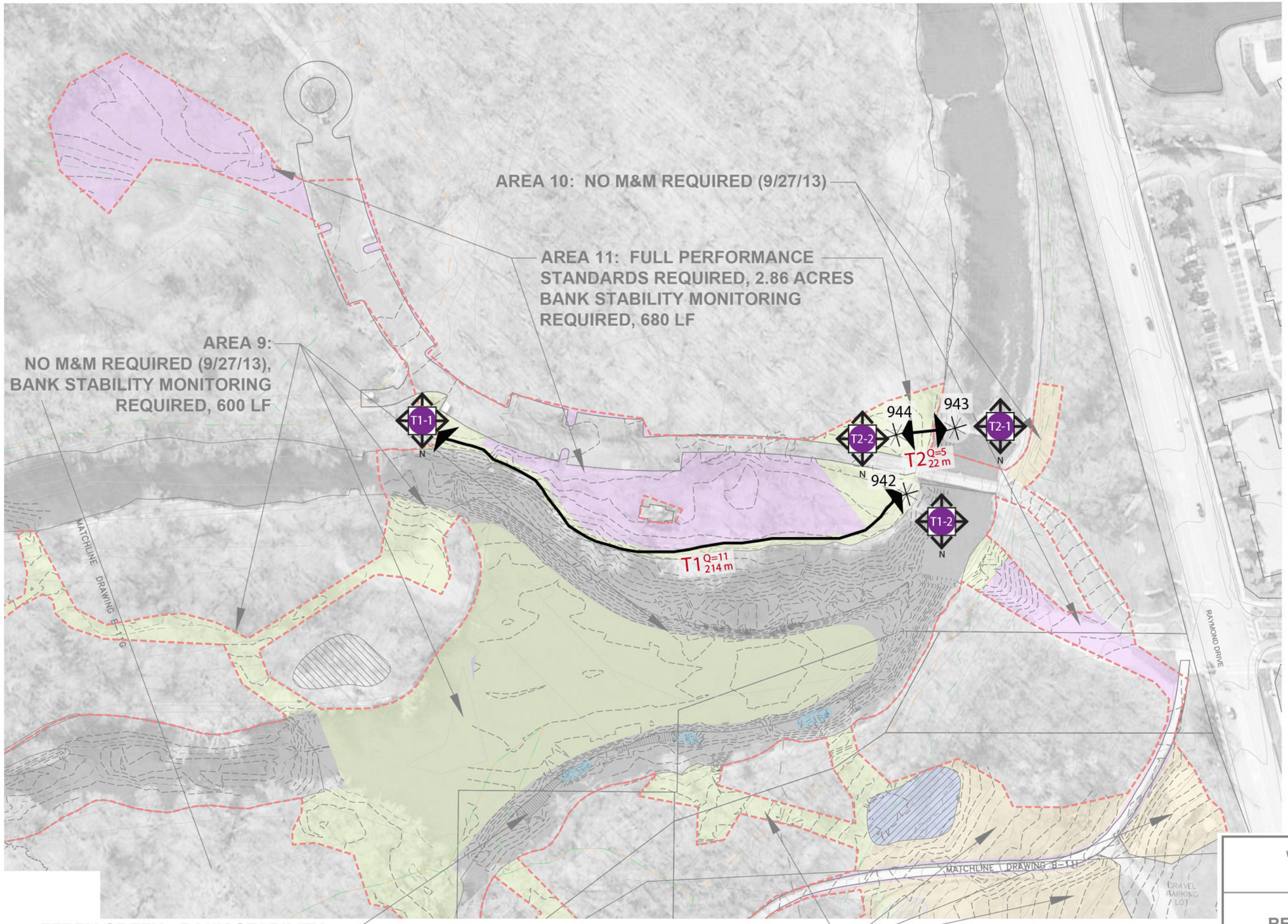
>

2016 Annual Monitoring Report

Reaches 8A, 8B, and the Mack Road Staging Area and Reach 5D, of the Kress Creek / West Branch DuPage River Site

APPENDIX D

Transect Photos & Locations (8.30.2016- 8.31.2016) Stream Monitoring Photos and Locations



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN FROM OCTOBER 2011 THROUGH OCTOBER 2012.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

- SURVEY POINT
- TRANSECT
- Q QUADRAT
- TRANSECT PHOTOGRAPHS (N, W, E, S)

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE B-11H

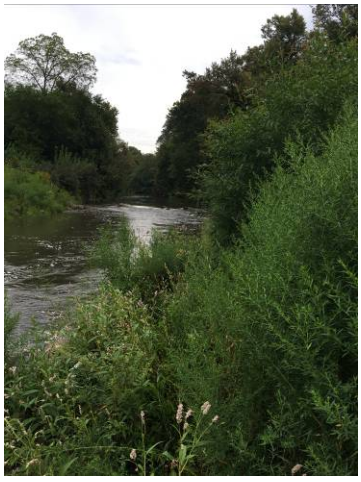

Reach 8- Transect 1(Start)- North


Reach 8- Transect 1 (Start)- East


Reach 8- Transect 1 (Start)-South


Reach 8- Transect 1 (Start)- West


Reach 8- Transect 1 (End)- North


Reach 8- Transect 1 (End)- East


Reach 8- Transect 1 (End)- South


Reach 8- Transect 1 (End)- West


Reach 8- Transect 2 (Start)- North


Reach 8- Transect 2 (Start)- East


Reach 8- Transect 2 (Start)- South


Reach 8- Transect 2 (Start)- West


Reach 8- Transect 2 (End)- North


Reach 8- Transect 2 (End)- East


Reach 8- Transect 2 (End)-South


Reach 8- Transect 2 (End)- West

952
T7-2
N
T7 Q=13 102 m
948
98°
947
T7-1
T5-2
N
T5 Q=6 45 m
946
T5-1
N
945
344°
T3-1
N
MATCHLINE DRAWING B-12H
T4-2
949
352°
N
953
T8-2
N
954
T8 Q=8 62 m
955
102°
T8-1
T6-1
951
312°
N
T6 Q=6 49 m
950
T6-2
N
GING AREA
FORMER MARSH/WET MEADOW WETLAND WAS NOT REPLACED DURING RESTORATION
GRAVEL PARKING LOT
RAYMOND DRIVE
MATCHLINE DRAWING B-11G
FERRY CREEK
T4 Q=31 245 m
T3 Q=35 278 m
957
T4-1
N
956
T3-2
N

FERRY CREEK: BANK STABILITY MONITORING REQUIRED, THIS POINT TO CONFLUENCE WITH RIVER BOTH BANKS, 1500 LF TOTAL

AREA 12: FULL PERFORMANCE STANDARDS REQUIRED, EXCLUDES GRAVEL LOT, 8.98 ACRES (TOTAL)

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH UPLAND PRAIRIE SEED MIX PER TABLE 5 ON DRAWING B-12

NOTES:

1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011, AND CARLSON McCAIN FROM OCTOBER 2011 THROUGH OCTOBER 2012.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

- SURVEY POINT
- TRANSECT
- Q QUADRAT
- TRANSECT PHOTOGRAPHS

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
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REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11I

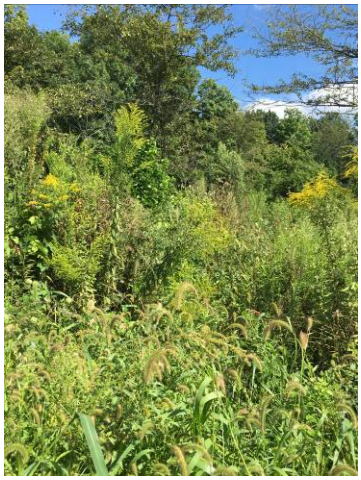

Reach 8- Transect 3 (Start)- North


Reach 8- Transect 3 (Start)- East


Reach 8- Transect 3 (Start)- South


Reach 8- Transect 3 (Start)- West


Reach 8- Transect 3 (End)- North


Reach 8- Transect 3 (End)- East


Reach 8- Transect 3 (End)- South


Reach 8- Transect 3 (End)- West


Reach 8- Transect 4 (Start)- North


Reach 8- Transect 4 (Start)- East


Reach 8- Transect 4 (Start)- South


Reach 8- Transect 4 (Start)- West


Reach 8- Transect 4 (End)- North


Reach 8- Transect 4 (End)- East


Reach 8- Transect 4 (End)- South


Reach 8- Transect 4 (End)- West


Reach 8- Transect 5 (Start)- North


Reach 8- Transect 5 (Start)- East


Reach 8- Transect 5 (Start)- South


Reach 8- Transect 5 (Start)- (West)


Reach 8- Transect 5 (End)- North


Reach 8- Transect 5 (End)- East


Reach 8- Transect 5 (End)- South


Reach 8- Transect 5 (End)- West


Reach 8- Transect 6 (Start)- North


Reach 8- Transect 6 (Start)- East


Reach 8- Transect 6 (Start)- South


Reach 8- Transect 6 (Start)- West


Reach 8- Transect 6 (End)- North


Reach 8- Transect 6 (End)- East


Reach 8- Transect 6 (End)- South


Reach 8- Transect 6 (End)- West


Reach 8- Transect 7 (Start)- North


Reach 8- Transect 7 (Start)- East


Reach 8- Transect 7 (Start)- South


Reach 8- Transect 7 (Start)- West


Reach 8- Transect 7 (End)- North


Reach 8- Transect 7 (End)- East


Reach 8- Transect 7 (End)- South


Reach 8- Transect 7 (End)- West


Reach 8- Transect 8 (Start)- North


Reach 8- Transect 8 (Start) East


Reach 8- Transect 8 (Start)- South


Reach 8- Transect 8 (Start)-West


Reach 8- Transect 8 (End)- North

Reach 8- Transect 8 (End)- East

Reach 8- Transect 8 (End)- South

Reach 8- Transect 8 (End)- West

POD R8-3: FULL PERFORMANCE STANDARDS
REQUIRED (MAY 2014 PROGRESS RPT)
0.14 TOTAL ACRES

POD R8-40: RESIDENTIAL LOTS COMPLETE
(MAY 2014 PROGRESS RPT)

POD R8-40:
PARCEL 04-35-404-013
RELEASED 08-11-2015

POD R8-4: RESIDENTIAL LOTS COMPLETE
(MAY 2014 PROGRESS RPT)

MATCHLINE REACH 7

MATCHLINE DRAWING B-11B

BATAVIA ROAD

PERMANENT STONE PARKING LOT

MAIN STREET

WARRENVILLE ROAD

T10-1 961 $T10^{Q=1}$

T10-2 960 $T10^{Q=2}$

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH LAWN SEED PER TABLE 7 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH PRAIRIE DROPSEED
- SURVEY POINT
- TRANSECT
- Q QUADRAT
- TRANSECT PHOTOGRAPHS

NOTES:

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0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

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MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11A

Reach 8- Transect 10 (Start)- North

Reach 8- Transect 10 (Start)- East

Reach 8- Transect 10 (Start)- South

Reach 10- Transect 8 (Start)- West

Reach 8- Transect 10 (End)-North

Reach 8- Transect 10 (End)- East

Reach 8- Transect 10 (End)- South

Reach 8- Transect 10 (End)- West

AREA 4: FULL PERFORMANCE STANDARDS REQUIRED, 0.35 ACRES
BANK STABILITY MONITORING REQUIRED, 450 LF

AREA 5: FULL PERFORMANCE
STANDARDS REQUIRED, 0.28 ACRES
BANK STABILITY MONITORING REQUIRED, 700 LF

AREA 3: NO M&M REQUIRED (9/27/13)
WEST BANK RELEASED FROM
BANK STABILITY MONITORING
(8/11/15)

974
975
976
977
978
T11 Q=1
T12 Q=7 67 m
T13 Q=6 60 m
T13-1
T13-2
APPR
BIKE TRAI
APPROXIMATE
MATCHLINE DRAWING B-11B
MATCHLINE DRAWING B-11D
RIVER ROAD
TOWNLINE ROAD
FOREST VIEW AVE. S.

LEGEND:
- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
- AREA SEEDED WITH WETLAND SEED MIX PER TABLE 6 ON DRAWING B-12
- AREA SEEDED WITH IDOT CLASS 2A SALT TOLERANT ROADSIDE MIX PER TABLE 8 ON DRAWING B-12
- AREA SEEDED WITH TRI-BLEND PERENNIAL RYE SEED PER TABLE 11 ON DRAWING B-12

NOTES:
1. BASEMAP PROVIDED BY DuPAGE COUNTY ON FEBRUARY 5, 2008. TOPOGRAPHY WITHIN THE LIMIT OF SURVEY CREATED FROM SURVEY COLLECTED BY CARLSON PSI FROM NOVEMBER 2010 THROUGH JANUARY 2011.
2. IN ADDITION TO THE SPECIFIED SEED MIX, RESTORED BANKS WERE OVERSEEDED WITH A 50:50 BLEND OF PRAIRIE CORDGRASS AND DARK GREEN BULRUSH FROM THE EDGE OF WATER TO THE TOP OF THE BANK TO A MAXIMUM DISTANCE OF 15-FT. FROM THE EDGE OF WATER.

- SURVEY POINT
- TRANSECT
- Q QUADRAT
- TRANSECT PHOTOGRAPHS

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11C


Reach 8- Transect 13 (Start)- North


Reach 8- Transect 13 (Start)- East


Reach 8- Transect 13 (Start)- South


Reach 8- Transect 13 (Start)- West


Reach 8- Transect 13 (End)- East


Reach 8- Transect 13 (Start)- South


Reach 8- Transect 13 (End)- West

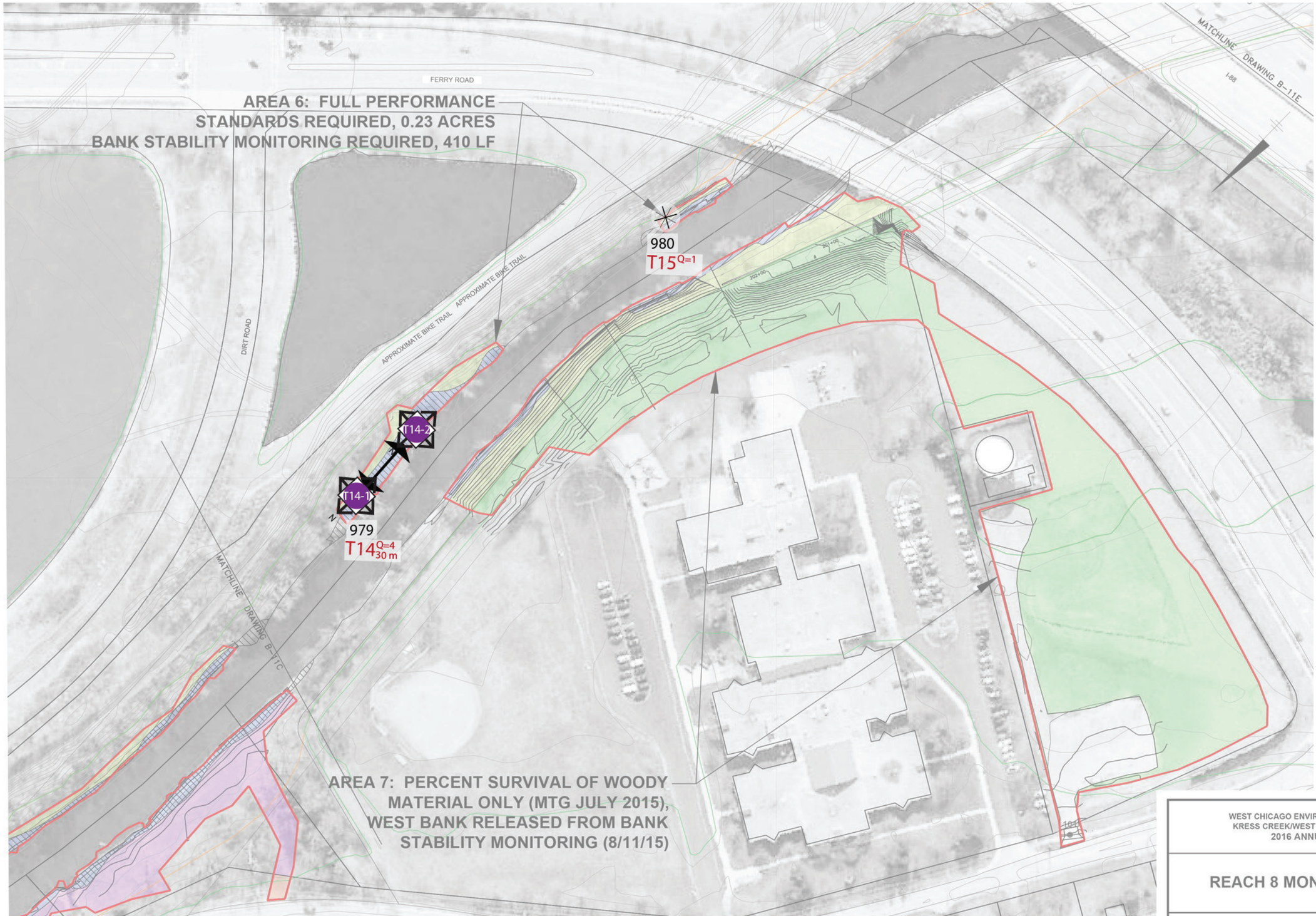

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
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MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE
B-11D

Reach 8- Transect 14 (Start)- North

Reach 8- Transect 14 (Start)- East

Reach 8- Transect 14 (Start)- South

Reach 8- Transect 14 (Start)- West

Reach 8- Transect 14 (End)- North

Reach 8- Transect 14 (End)- East

Reach 8- Transect 14 (End)- South

Reach 8- Transect 14 (End)- West

Reach 8- Transect 15- North

Reach 8- Transect 15- East

Reach 8- Transect 15- South

Reach 8- Transect 15- West

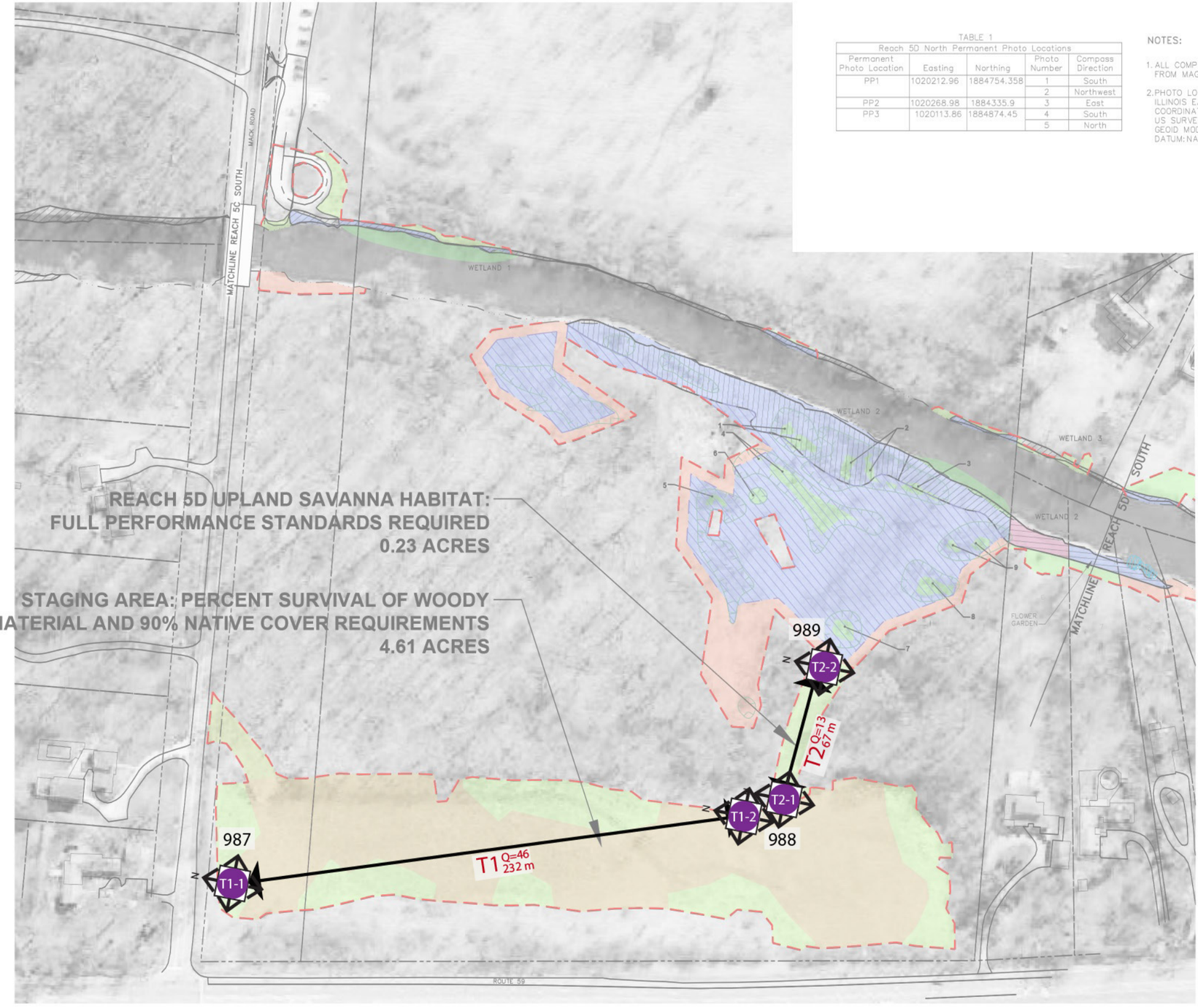


TABLE 1
Reach 5D North Permanent Photo Locations

Permanent Photo Location	Easting	Northing	Photo Number	Compass Direction
PP1	1020212.96	1884754.358	1	South
			2	Northwest
PP2	1020268.98	1884335.9	3	East
PP3	1020113.86	1884874.45	4	South
			5	North

NOTES:

1. ALL COMPASS DIRECTIONS ARE FROM MAGNETIC NORTH.
2. PHOTO LOCATIONS ARE IN THE ILLINOIS EAST STATE PLANE COORDINATE SYSTEM IN UNITS OF US SURVEY FEET. GEOID MODEL: GEOID 96 (CONUS) DATUM: NAD 83

LEGEND:

- LIMIT OF ACTUAL DISTURBANCE
- PROPERTY LINE
- APPROXIMATE EDGE OF WATER
- POOL
- RIFFLE
- 8 HOLLOW
- WETLAND BOUNDARY
- WET MEADOW WETLAND
- FORESTED WETLAND
- MITIGATION WETLAND
- RESTORED UPLAND SAVANNA
- RESTORED UPLAND SAVANNA AND FERMI LABS SEED
- RESTORED FERMI LABS SEED
- RESTORED WETLAND
- AREA RESTORED WITH PLANT PLUGS
- RESTORED SHADY FLOODPLAIN
- RESTORED LAWN
- RESTORED BENTGRASS

- SURVEY POINT
- TRANSECT
- Q QUADRAT
- TRANSECT PHOTOGRAPHS

NOTE:

1. BASE MAP PROVIDED BY KERR-McGEE CHEMICAL LLC (NOW KNOWN AS TRONOX) IN AN ARC VIEW PROJECT ENTITLED WEST CHICAGO KRESS CREEK. TOPOGRAPHIC LINES WITHIN THE LIMIT OF SURVEY LINES WERE DEVELOPED BY ARCADIS FROM SURVEY DATA COLLECTED BY PROSOURCE TECHNOLOGIES, INC. (NOW KNOWN AS CARLSON PSI) FOLLOWING COMPLETION OF RESTORATION.

0 80' 160'
GRAPHIC SCALE

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS WHICH REFERENCES RECORD DRAWING B-12C, TRACER NO. B0071024/0000/00035/REACH5D/71024G15.DWG, DATED 3/27/09. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

MACK ROAD MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE 12-6


Mack Rd.- Transect 1 (Start)- North


Mack Rd. – Transect 1 (Start)- East


Mack Rd.- Transect 1 (Start)- South


Mack Rd.- Transect 1 (Start)- West


Mack Rd.- Transect 1 & 2 (End) North


Mack Rd.- Transect 1 & 2 (End)- East


Mack Rd.- Transect 1 & 2 (End)- South

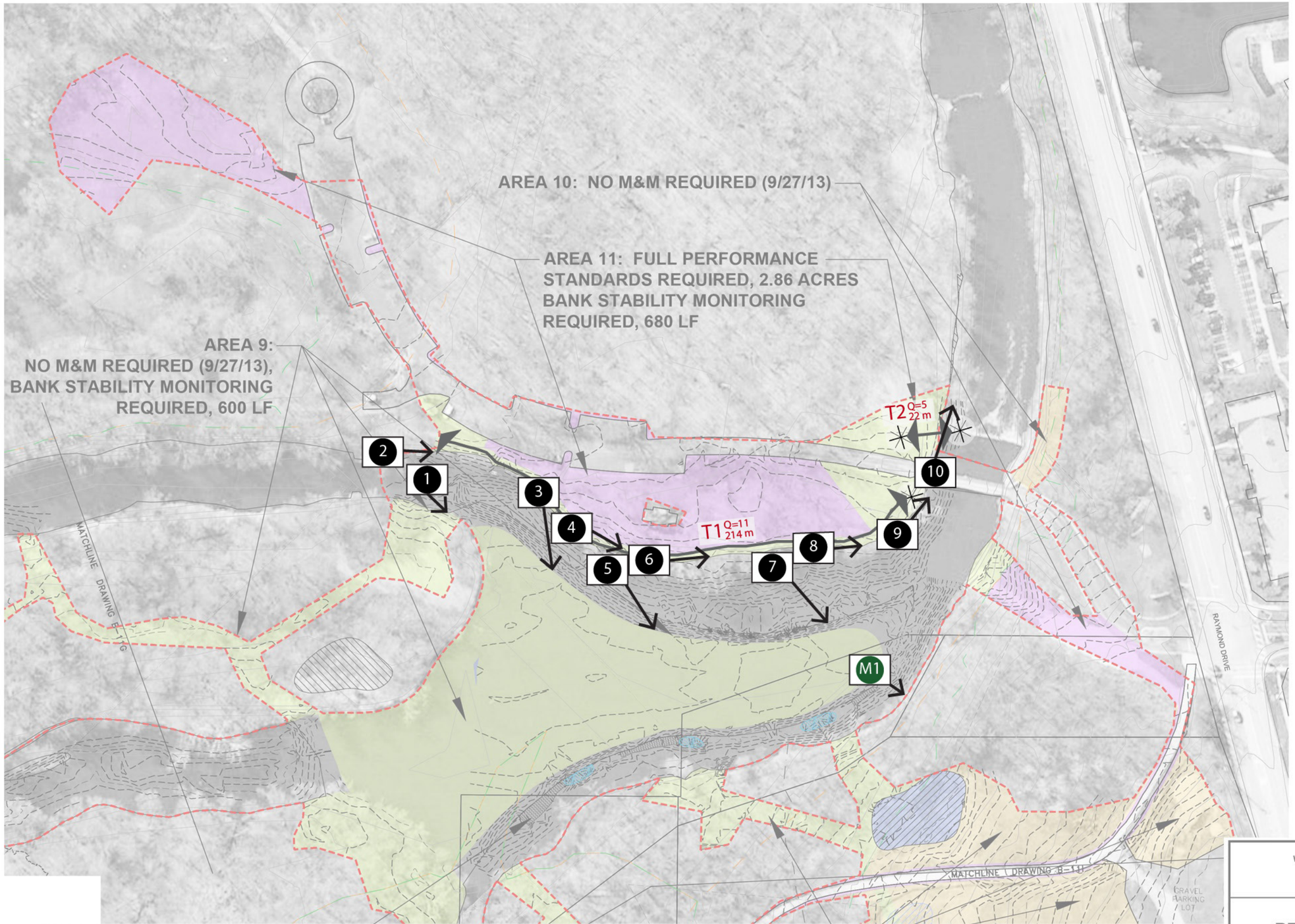

Mack Rd.- Transect 1 & 2 (End)- West


Mack Rd. –Transect 2 (Start)- North


Mack Rd.- Transect 2 (Start)- East


Mack Rd.- Transect 2 (Start)- South


Mack Rd. – Transect 2 (Start)- West



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
- POST-CONSTRUCTION CONTOUR
- LIMIT OF ACTUAL DISTURBANCE
- EXISTING TRAIL USED AS HAUL ROAD
- WETLAND BOUNDARY
- MARSH/WET MEADOW WETLAND
- FORESTED WETLAND
- BERM
- AREA SEEDED WITH OPEN FLOODPLAIN SEED MIX PER TABLE 4 ON DRAWING B-12
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NOTES:

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- SURVEY POINT
- TRANSECT
- Q QUADRAT
- BANK STABILITY PHOTOGRAPH LOCATION, 12/12/2016
- BANK STABILITY PHOTOGRAPH LOCATION, 6/29/2016

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUP JJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE B-11H


Reach 8- Photo 1


Reach 8- Photo 2


Reach 8- Photo 3


Reach 8- Photo 4


Reach 8- Photo 5

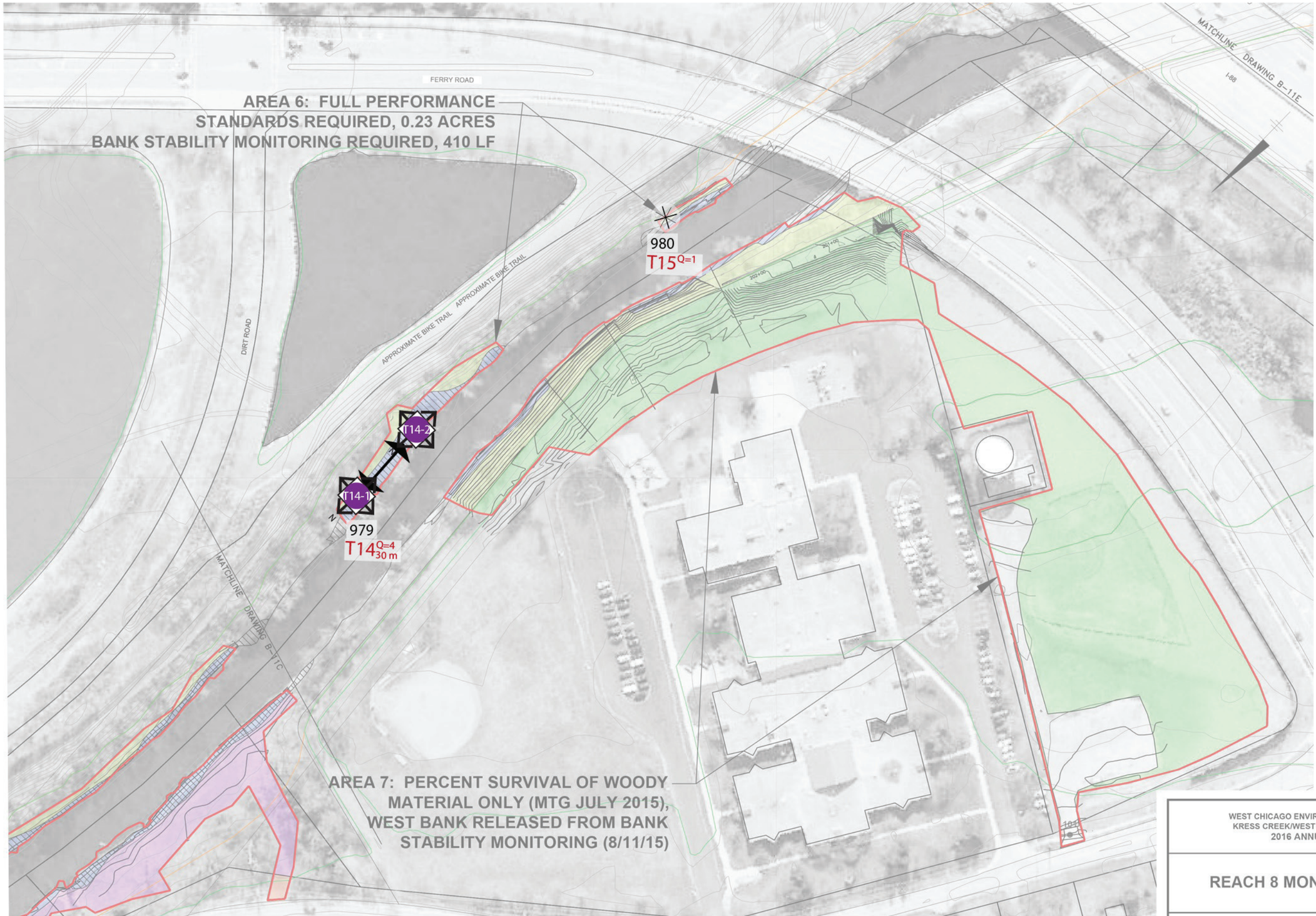

Reach 8- Photo 6


Reach 8- Photo 7


Reach 8- Photo 8


Reach 8- Photo 9


Reach 8- Photo 10



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WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

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FIGURE
B-11D

Reach 8- Photo 11

Reach 8- Photo 12

Reach 8- Photo 13

Reach 8- Photo 13

AREA 4: FULL PERFORMANCE STANDARDS REQUIRED, 0.35 ACRES
BANK STABILITY MONITORING REQUIRED, 450 LF

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STANDARDS REQUIRED, 0.28 ACRES
BANK STABILITY MONITORING REQUIRED, 700 LF

AREA 3: NO M&M REQUIRED (9/27/13)
WEST BANK RELEASED FROM
BANK STABILITY MONITORING
(8/11/15)

T11 Q=1

T12 Q=7 67 m

T13 Q=6 60 m

APPROXIMATE BIKE TRAIL

RIVER ROAD

TOWNLINE ROAD

FOREST VIEW AVE. S.

MATCHLINE DRAWING B-11B

MATCHLINE DRAWING B-11D

22 21 20 19 18 17 16 15

LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE-CONSTRUCTION CONTOUR
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- SURVEY POINT
- TRANSECT
- Q QUADRAT
- BANK STABILITY PHOTOGRAPH LOCATION, 12/12/2016

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8-17-2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS.
CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

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FIGURE
B-11C

Reach 8- Photo 15

Reach 8- Photo 16

Reach 8- Photo 17

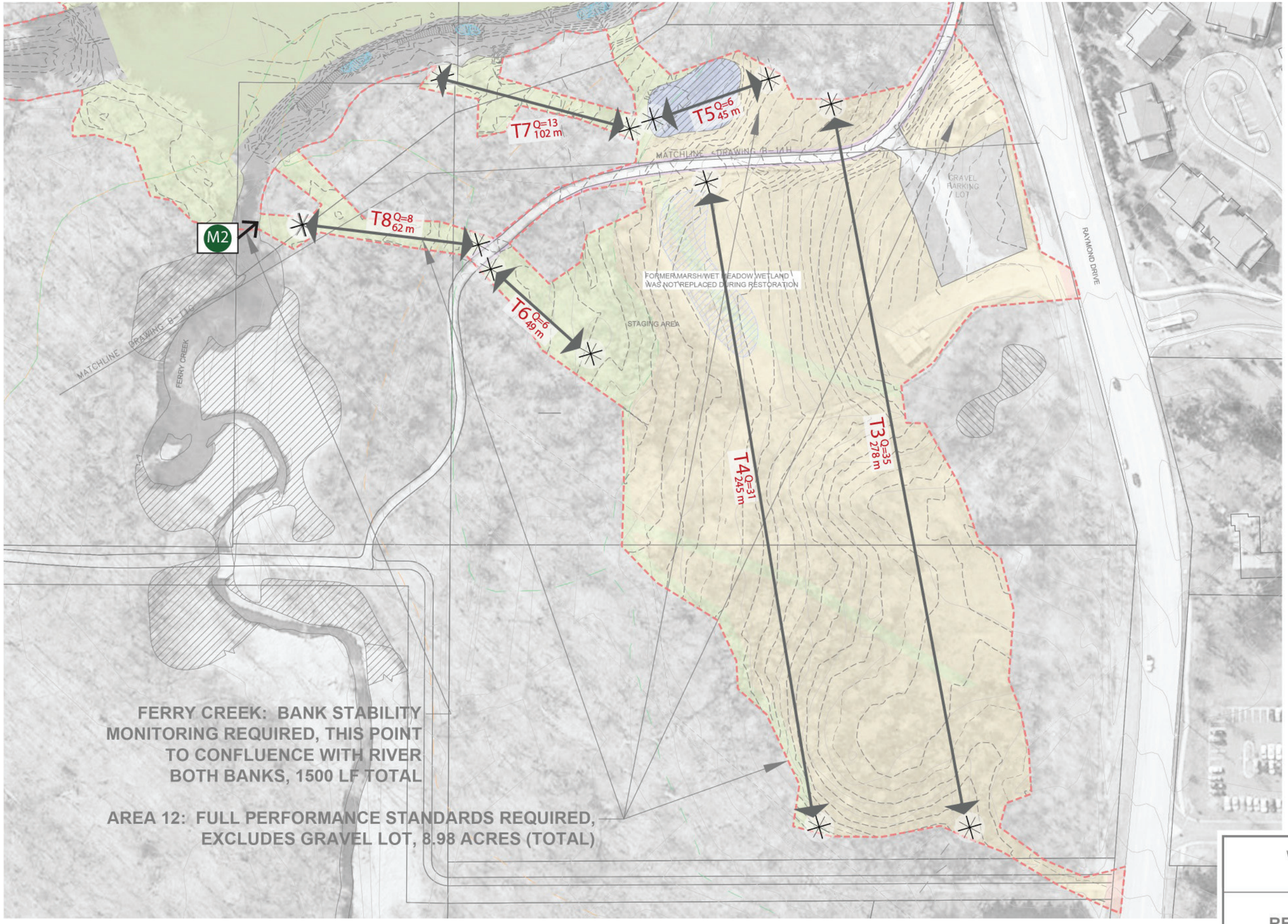
Reach 8- Photo 18

Reach 8- Photo 193

Reach 8- Photo 20

Reach 8- Photo 21

Reach 8- Photo 22



LEGEND:

- APPROXIMATE EDGE OF WATER
- APPROXIMATE FLOODWAY
- APPROXIMATE FLOODPLAIN
- PROPERTY LINE
- LIMIT OF SURVEY
- PRE–CONSTRUCTION CONTOUR
- POST–CONSTRUCTION CONTOUR
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- SURVEY POINT
- TRANSECT
- Q QUADRAT
- BANK STABILITY PHOTOGRAPH LOCATION, 6/29/2016

0 60' 120'
GRAPHIC SCALE

MAP UPDATED 8–17–2015

FIGURE MADE FROM 2013 ANNUAL MONITORING REPORT FILE CREATED BY ARCADIS. CURRENT AERIAL PHOTO FROM BING MAPS, JULY 2015.

WEST CHICAGO ENVIRONMENTAL RESPONSE TRUST
KRESS CREEK/WEST BRANCH DuPAGE RIVER SITE
2016 ANNUAL MONITORING

REACH 8 MONITORING STATUS

SMITHGROUPJJR
44 EAST MIFFLIN STREET
SUITE 500
MADISON, WI 53703
608.251.1177
www.smithgroupjjr.com

FIGURE B-11I

2016 Annual Monitoring Report

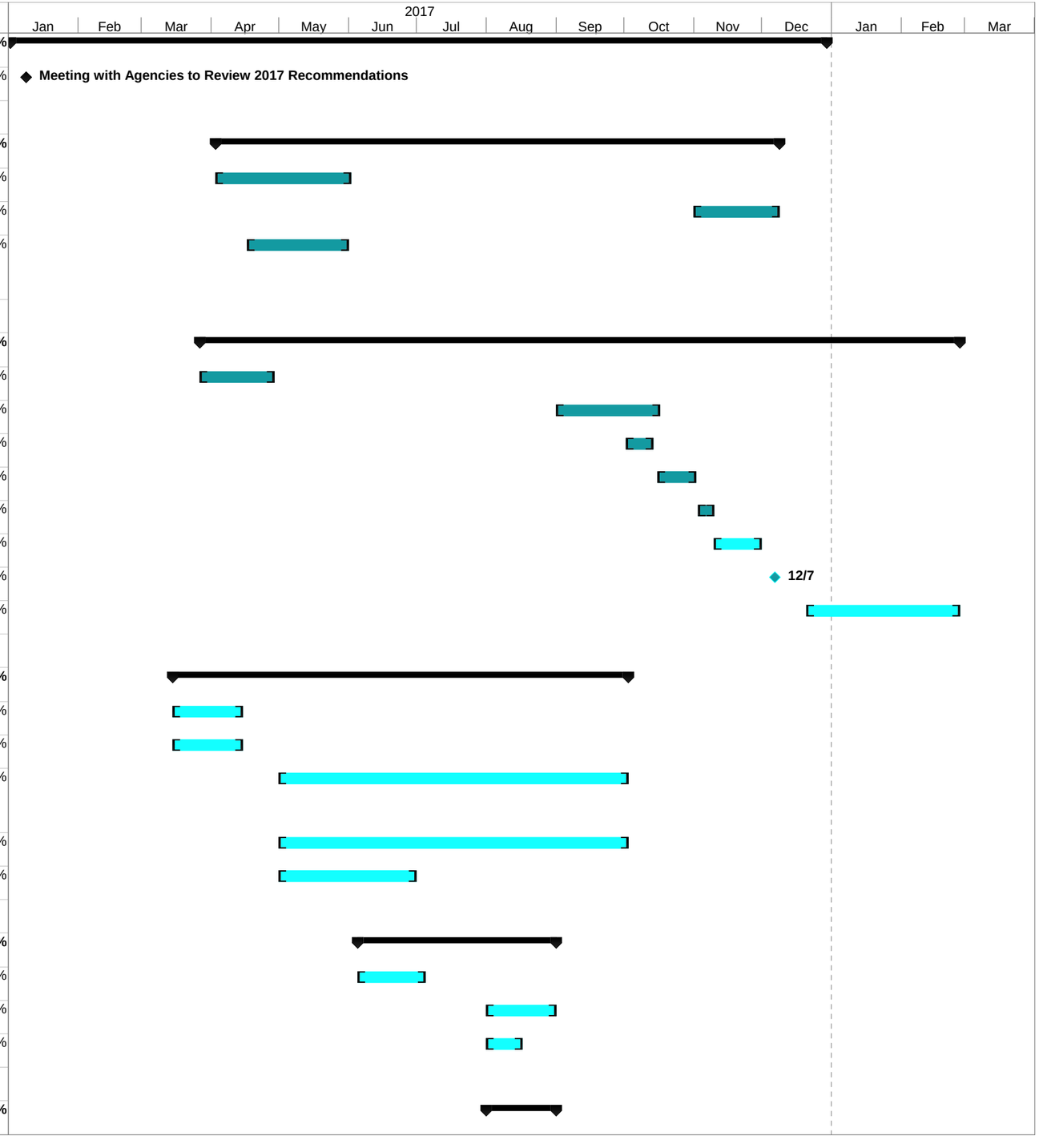
Reaches 8A, 8B, 5D and
the Mack Road Staging Area,
of the Kress Creek /
West Branch DuPage River Site

APPENDIX E

2017 Project Schedule

WCERT Kress Creek Monitoring
2017 Projected Schedule

ID	Task Name	Duration	Start	Finish	% Complete
1	**Meetings**	**260 days**	**Mon 1/2/17**	**Fri 12/29/17**	**0%**
2	Meeting with Agencies to Review 2017 Recommendations	0 days	Mon 1/9/17	Mon 1/9/17	0%
3					
4	**Implementation of Remedial Planting and Seeding**	**180 days**	**Mon 4/3/17**	**Fri 12/8/17**	**0%**
5	Re-Seed Portions of Reach 8 Areas 11 & 12	8.8 wks	Mon 4/3/17	Thu 6/1/17	0%
6	Re-Seed of Reach 5D	5.6 wks	Wed 11/1/17	Fri 12/8/17	0%
7	Assess and Replace Warrantied Woody Plant Material of Reach 8 Bower Elementary School and Reach 7 Islands	33 days	Mon 4/17/17	Wed 5/31/17	0%
8					
9	**Remedial Streambank Restoration Plans and Specifications**	**241 days**	**Mon 3/27/17**	**Mon 2/26/18**	**0%**
10	Field Meetings and Topographic Survey to Determine Repair	5 wks	Mon 3/27/17	Fri 4/28/17	0%
11	Develop Draft Plans for Bid	6.4 wks	Fri 9/1/17	Mon 10/16/17	0%
12	Develop Budget for Remedial Restoration Implementation	2 wks	Mon 10/2/17	Fri 10/13/17	0%
13	Review by WCERT	13 days	Mon 10/16/17	Wed 11/1/17	0%
14	Finalize Remediation Plans	5 days	Fri 11/3/17	Thu 11/9/17	0%
15	Agency Review	15 days	Fri 11/10/17	Thu 11/30/17	0%
16	Release Remediation Plans for Bid	0 days	Thu 12/7/17	Thu 12/7/17	0%
17	Implementation of Streambank Remediation	48 days	Thu 12/21/17	Mon 2/26/18	0%
18					
19	**Implementation of Vegetation Management Activities**	**144 days**	**Wed 3/15/17**	**Mon 10/2/17**	**0%**
20	Controlled Burn of Reach 8 Areas 11 & 12 and Mack Rd. Staging Area	23 days?	Wed 3/15/17	Fri 4/14/17	0%
21	Pull Garlic Mustard in Reach 8 Pod R8-3	23 days	Wed 3/15/17	Fri 4/14/17	0%
22	Spot Herbicide of Reach 8 Pod R8-3, Areas 4, 5, 6, 11, 12 and Reach 5D & 5E (As Needed)	111 days	Mon 5/1/17	Mon 10/2/17	0%
23	Mowings of Reach 8 Areas 4,11, 12 and Reach 5D & 5E (1-3x)	111 days	Mon 5/1/17	Mon 10/2/17	0%
24	Cut and Herbicide Woody Weeds of Reach 8 Pod R8-3 & Area 11	45 days	Mon 5/1/17	Fri 6/30/17	0%
25					
26	**Vegetation Monitoring**	**64 days**	**Mon 6/5/17**	**Thu 8/31/17**	**0%**
27	Inventory Flora, Mid-Summer 2017	22 days	Mon 6/5/17	Tue 7/4/17	0%
28	Inventory and Assess Tree Survival / Replacement Recommendations	23 days	Tue 8/1/17	Thu 8/31/17	0%
29	Inventory and Quantitative Sampling, Late Summer 2017	12 days	Tue 8/1/17	Wed 8/16/17	0%
30					
31	**Bank Stability Monitoring**	**23 days**	**Tue 8/1/17**	**Thu 8/31/17**	**0%**



WCERT Kress Creek Monitoring
2017 Projected Schedule

ID	Task Name	Duration	Start	Finish	% Complete
32	Bank Stability Monitoring	23 days	Tue 8/1/17	Thu 8/31/17	0%
33					
34	**Reporting**	**75 days**	**Mon 10/2/17**	**Fri 1/12/18**	**0%**
35	Prepare Draft Annual Report	8.8 wks	Mon 10/2/17	Thu 11/30/17	0%
36	Review of Draft Report by WCERT	1.2 wks	Fri 12/1/17	Fri 12/8/17	0%
37	Finalize Report for Distribution to Agencies	8 days	Mon 12/11/17	Wed 12/20/17	0%
38	Distribute Report to Agencies	0 days	Thu 12/21/17	Thu 12/21/17	0%
39	Agency Report Review	12 days	Thu 12/21/17	Fri 1/5/18	0%
40	Finalize Report with Agency Comments	5 days	Mon 1/8/18	Fri 1/12/18	0%